North Antelope Rochelle Mine (NARM) 11/29/2019 Exceptional Event Demonstration for Site NA-8

Chronology of Events

11-29-16	NARM Notified WDEQ Air Quality Division (AQD) of Exceedance at NA-8 by Phone Message and Follow-up Email
11-30-16	AQD Communication to NARM Regarding Potential Exceedance at NA-8
11-30-16	NARM Sent Email Confirmation of NA-8 Exceedance to AQD
11-07-17	NARM Sent Initial Notification Form with Cover Letter to AQD
11-15-17	AQD Notified EPA Region 8 of 11-29-16 Exceptional Event at NARM NA-8 and Intent to Pursue Exceptional Event Designation
03-29-18	NARM Sent Cover Letter to AQD for Exceptional Event Demonstration Report
03-29-18	NARM Submitted Exceptional Event Demonstration Report
03-29-18	NARM Submitted Exceptional Event Demonstration Reverse Trace Map (Titled Exhibit 1)
03-30-18	AQD Sent Email Acknowledging Receipt of Exceptional Event Package
03-30-18	AQD Sent Letter Acknowledging Receipt of Exceptional Event Demonstration Report Package and Outlining Review Process
10-29-18	AQD Sent Letter Responding to Exceptional Event Demonstration Report and Notifying NARM of Decision to Pursue Flagging of NA-8 PM_{10} Data From 11/29/2016 Under the Exceptional Event Rule

11-29-16	NARM Notified WDEQ Air Quality Division (AQD) of Exceedance at NA-8 by Phone Message and Follow-up Email
11-30-16	AQD Communication to NARM Regarding Potential Exceedance at NA-8
11-30-16	NARM Sent Email Confirmation of NA-8 Exceedance to AQD

(Note: These are all documented in a single email string)

Cox, Kimberly

From: Blake, Chris
Sent: Wednesday, November 30, 2016 1:51 PM
To: Brad Steidley
Subject: RE: NARM - Air Quality - 11/29/16

Brad,

Yes. Unfortunately it was an exceedance at the NA-8 monitor. I do not have the final 24-hr average as at least one hour will be invalid due to a temperature fault, but the final result will most likely be over 250 anyway. And a preliminary look at the data shows 10 hours of 50+ mph wind gusts with most of the day consistently experiencing 30+ mph constant winds.

I will work with Phil Dinsmoor in our Caballo permitting office and with IML to compile a High Wind Event demonstration to submit an Exceptional Event Flag Request.

I will also be in contact with you to make sure that I don't miss anything.

Thank you,

-Chris

From: Brad Steidley [mailto:brad.steidley@wyo.gov]
Sent: Wednesday, November 30, 2016 8:06 AM
To: Blake, Chris
Subject: Re: NARM - Air Quality - 11/29/16

Thanks Chris,

Any word yet if there was/was not an exceedance?

On Tue, Nov 29, 2016 at 12:33 PM, Blake, Chris <CBlake@peabodyenergy.com> wrote:

Brad and Tanner,

I just left a voicemail for Brad a few minutes ago regarding the air quality here at NARM.

High Wind Event at the south end of the PRB. Sustained winds 30-40 mph; gusts 50 - 60 mph. AQ Action plan was implemented.

I will call tomorrow when we have all of the hourly readings in and recorded for today.

-Chris

North Antelope Rochelle Mine (NARM)

Peabody Powder River Operations, LLC (Peabody Energy)

Environmental Supervisor | 341A Antelope Road | Caller Box 3035 | Gillette, WY 82717-3035

307.464.4509 (☎) | 307.464.4631 (🖷) | cblake@peabodyenergy.com (✉)

Please consider the environment before printing this email.

--
Brad Steidley
WDEQ-AQD
Compliance Program
Sheridan District Office

11-07-17 NARM Sent Initial Notification Form with Cover Letter to AQD

Peabody Energy
Caller Box 3034
Gillette, Wyoming 82717-3034

November 7, 2017

Cara Keslar
Ambient Air Monitoring Supervisor
Wyoming Dept. of Environmental Quality
Air Quality Division
200 West 17th Street
Cheyenne, WY 82002

RE: PM_{10} Exceptional Event Demonstration, Initial Notification

Dear Ms. Keslar:

Attached you will find the Initial Notification for a PM_{10} exceedance recorded on November 29, 2016. The exceedance was recorded on the NA-8 sampler at North Antelope Rochelle Mine (NARM). Also attached for your information and convenience are the design calculation, a Preliminary Data Analysis Report, and a copy of the 4th Quarter 2016 Data Report.

It is NARM's intent to prepare a document to demonstrate that an exceptional event occurred on that date. I will be the contact for the company on this project. Mr. Ronn Smith with Inter-Mountain Laboratories, Inc., will coordinate this project with personnel at the mine. Would you please ensure that Ronn and I receive copies of any correspondence between the State and EPA as this project moves forward? If you have any questions or concerns please let us know.

Sincerely,

Philip C. Dinsmoor
Director, Environmental Services, PRB

c: Ronn Smith, Senior Engineer, IML
Chris Blake, NARM

Enclosures (4)

EE Initial Notification Summary Information

PM_{10} Template

Submitting Agency: State of Wyoming – Air Quality Division
Agency Contact: Cara Keslar
Date Submitted:
Applicable NAAQS: 24-Hour PM_{10} (1987)
Affected Regulatory Decision[1]: (AQD will fill this section out)
(for classification decisions, specify level of the classification with/without EE concurrence)
Area Name/Designation Status: Attainment/Unclassifiable
Design Value Period (list three year period): 2014-2016
(where there are multiple relevant design value periods, summarize separately)

A) Information specific to each flagged monitor day that may be submitted to EPA in support of the affected regulatory decision listed above

Date of Event	Type of Event (high wind, volcano, wildfires/prescribed fire, other[2])	AQS Flag	Monitor AQS ID (and POC)	Monitor Name	Exceedance Concentration (with units)	Notes (e.g. event name, links to other events)
11/29/2016	**High wind**	**RJ**	**56-009-0088-1**	**NARM NA-8**	**299.6 µg/m^3**	**NARM High Wind Dust Exceptional Event Demonstration: Nov 29, 2016, not yet submitted to EPA**
11/18/2015	**High wind**	**RJ**	**56-009-0088-1**	**NARM NA-8**	**266.7 µg/m^3**	**NARM High Wind Dust Exceptional Event Demonstration: Nov 18, 2015, submitted to EPA but no concurrence**
3/28/2015	**High wind**	**RJ**	**56-009-0088-1**	**NARM NA-8**	**276.1 µg/m^3**	**NARM High Wind Dust Exceptional Event Demonstration: Mar 28, 2015, submitted to EPA but no concurrence**

B) Violating Monitors Information

(listing of all violating monitors in the planning area, regardless of operating agency, and regardless of whether or not they are impacted by EEs)

Monitor (AQS ID and POC)	Design Value (without EPA concurrence on any of the events listed in table A above)	Design Value (with EPA concurrence on all events listed in table A above)
NARM NA-8 (56-009-0088-1)	1.0	0.0

[1] designation, classification, attainment determination, attainment date extension, or finding of SIP inadequacy leading to SIP call
[2] Provide additional information for types of event described as "other"

C) Summary of Maximum Design Value (DV) Monitor Information (Effect of EPA Concurrence on Maximum Design Value Monitor Determination)

(Two highest values from Table B)

Maximum DV monitor (AQS ID and POC) **without EPA concurrence** on any of the events listed in table A above	Design Value 1.0	Design Value Monitor **56-009-0088**	Comment
Maximum DV monitor (AQS ID and POC) **with EPA concurrence** on all events listed in table A above	Design Value 0.0	Design Value Monitor **56-009-0088**	Comment

D) List of any monitors (AQS ID and POC) within planning area with invalid design values (e.g. due to data incompleteness)

11-15-17 AQD Notified EPA Region 8 of 11-29-16 Exceptional Event at NARM NA-8 and Intent to Pursue Exceptional Event Designation

November 15, 2017

Mr. Doug Benevento
Administrator, EPA Region 8
1595 Wynkoop St.
Denver, CO 80202

Re: Initial Notification of PM_{10} Exceptional Event on November 29, 2016

Dear Mr. Benevento,

Attached is the initial notification of a high wind blowing dust exceptional event that occurred in southern Campbell County on November 29, 2016 that led to exceedances of the 24-hour PM_{10} NAAQS at one (1) industrial monitor. The Wyoming Department of Environmental Quality – Air Quality Division (AQD) has evaluated the initial notification and circumstances surrounding the event and represents that it should be evaluated by Region 8 as a possible exceptional event.

The AQD would like to request that the Administrator determine this possible event meets the provisions of 40 CFR 50.14 (a) (1) (F) as a regulatory determination made on a case by case basis. The AQD considers this event to be of regulatory significance because of the AQD's reliance on ambient data to determine compliance with the NAAQS at Powder River Basin (PRB) mines, the use of ambient data in AQD's permitting process, and the outstanding WildEarth Guardians Petition to make the PRB a PM_{10} non-attainment area. These reasons demonstrate the need to accurately portray anthropogenic versus non-anthropogenic or "exceptional" air quality issues to the public by means of excluding exceptional event concurred data from the data record.

In 1993 the AQD and EPA Region 8 signed a Memorandum of Agreement (MOA) to rely on ambient monitoring data at PRB coal mines to determine compliance with the 24-hour PM_{10} NAAQS under AQD's permitting process, rather than modeling potential 24-hour PM_{10} impacts. The exceedance that the AQD is requesting Region 8 to review occurred at a PRB coal mine monitor that is covered under this MOA. The AQD is required to report this data to EPA Region 8, which is accomplished through EPA's AQS database and the annual PRB Network Review required by the AQD-EPA Performance Partnership Agreement (PPA). Because the effectiveness of the MOA is contingent on the lack of PM_{10} NAAQS violations in the PRB, correctly reporting these data to EPA and AQS by placing exceptional event flags on these data is essential. The Region must take the appropriate steps to review and issue concurrence or non-concurrence on these data to accurately reflect the design value statistics in AQS and therefore accurately represent compliance with the NAAQS per the MOA.

As mentioned above, the AQD relies on ambient industrial PM_{10} data at coal mines to determine compliance with the 24-hour NAAQS in the permitting process. It is critical that exceedances and

violations of the NAAQS are properly characterized in the permit analysis as being anthropogenic or exceptional in nature. The AQD cannot issue a permit to a source that will cause or contribute to a violation of the NAAQS. For mines that cannot model their potential permitting action, the AQD must rely on the ambient data record to prove compliance with the NAAQS. In order to rely on these monitoring data for permitting actions, Exceptional Events must be properly characterized in the data record and must be documented to EPA per 40 CFR 50.14.

In 2011 Wild Earth Guardians submitted a petition to the EPA regarding areas in the west that were violating the 24-hour PM_{10} NAAQS and compelling the EPA to designate these areas as non-attainment. The petition was updated in 2013. The petition referenced data from AQS for Wyoming that had exceptional events flagged by the AQD, but which had not been acted on by the EPA. Among the monitors identified were those in the PRB that also had as yet un-concurred exceptional events flags. It is AQD's understanding the EPA has not yet responded to this petition. In order to avoid the stated consequences of the petition, namely the designation of Campbell County as a non-attainment area and triggering a revision of Wyoming's relevant State Implementation Plan (SIP), it is imperative that EPA agree to review the potential exceptional events demonstrations to accurately reflect the design values of monitors named in this petition and any other monitors that could currently be considered to be violating the NAAQS.

It is also the AQD's stance that any exceedance caused by an exceptional event is significant and that it is important to demonstrate to the public the difference between exceedances that are anthropogenic versus those that are non-anthropogenic or exceptional in nature. Properly characterizing these exceedances in the public record and providing scientific evidence supporting the claim of exceptionality is essential to our shared role of serving the public. These data are used by the public, researchers, and other public agencies to make scientific, public health, and policy decisions. These data must be properly flagged and concurred with in the EPA's AQS in order for those data to be handled correctly. Without the critical step of determining concurrence, data is often misused by these entities to support decisions.

Due to the above mentioned factors, the AQD considers these exceedances to meet the criteria of regulatory significance and requests that the Administrator make a determination under 40CFR 50.14 (a) (1) (F) that the EPA will agree to review an Exceptional Event demonstration for these events.

Please contact Cara Keslar, Monitoring Section Supervisor, with questions at 307-777-8684.

Sincerely,

Nancy E. Vehr
Administrator, Air Quality Division

Cc: Cara Keslar, AQD
Phil Dinsmoor, Peabody Coal
Ronn Smith, IML

EE Initial Notification Summary Information — PM_{10} Template

Submitting Agency: State of Wyoming – Air Quality Division
Agency Contact: Cara Keslar
Date Submitted:
Applicable NAAQS: 24-Hour PM_{10} (1987)
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(for classification decisions, specify level of the classification with/without EE concurrence)
Area Name/Designation Status: Attainment/Unclassifiable
Design Value Period (list three year period): 2014-2016
(where there are multiple relevant design value periods, summarize separately)

A) Information specific to each flagged monitor day that may be submitted to EPA in support of the affected regulatory decision listed above

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D) List of any monitors (AQS ID and POC) within planning area with invalid design values (e.g. due to data incompleteness)

03-29-18 NARM Sent Cover Letter to AQD for Exceptional Event Demonstration Report

Peabody Energy
Caller Box 3034
Gillette, Wyoming 82717-3034

March 29, 2018

Kristina Hooper-Barden
Coal Mine Project Manager
Wyoming Department of Environmental Quality
Air Quality Division
200 West 17th Street
Cheyenne, WY 82002

RE: North Antelope Rochelle Mine; PM10 Exceptional Event Demonstration

Dear Ms. Hooper:

Attached please find an Exceptional Event demonstration package for a single exceedance that occurred on November 29, 2016 at North Antelope Rochelle Mine (NARM). We are submitting a digital copy at this time in the form of a pdf. A hard copy can be prepared if you prefer.

The Initial Notification for this exceedance was submitted to Air Quality Division on November 7, 2017. As noted in an Initial Notification, the exceedance was recorded on the NA-8 sampler at NARM.

We understand that you reviewed and approved the Initial Notification and forwarded it to the Environmental Protection Agency Region 8 office under a cover letter of November 15, 2017. To our knowledge, the Environmental Protection Agency has not responded as of this writing.

The attached document clearly demonstrates that high winds were the cause of the exceedance at NARM. It goes on to demonstrate, as required by the Exceptional Events Rule (2016), that the exceedance was not reasonably controllable or preventable and the high wind was a natural event. For these reasons Peabody Powder River Mining, LLC requests that the 24-hour PM_{10} average recorded at the NA-8 sampler on November 19, 2016 be flagged and excluded from regulatory decisions in accordance with the Exceptional Events Rule.

If you have any questions or concerns please let me know. Thank you.

Sincerely,

Philip C. Dinsmoor
Director, Environmental Services, PRB
Peabody Energy

c: Chris Blake, NARM
Ronn Smith, Senior Engineer, IML

Enclosure

03-29-18 NARM Submitted Exceptional Event Demonstration Report

DEMONSTRATION OF EXCEPTIONAL EVENT
(HIGH WIND)

NA-8 PM_{10} MONITOR
EXCEEDANCE ON NOVEMBER 29, 2016

NORTH ANTELOPE ROCHELLE MINE

Prepared For

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

March 27, 2018

TABLE OF CONTENTS

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1.0 EXECUTIVE SUMMARY

On November 29, 2016 high winds were recorded across much of Wyoming, including the southern Powder River Basin (PRB). This high-wind event triggered an exceedance of the 24-hour PM_{10} Wyoming Ambient Air Quality Standard (WAAQS) and the 24-hour PM_{10} National Ambient Air Quality Standard (NAAQS) at the North Antelope Rochelle Mine (NARM) southeast of Wright, Wyoming. Figure 1 shows the wind rose at NARM on November 19, which reflects unusually high wind speeds from a uniform wind direction.

NARM operates a continuous PM_{10} monitoring network consisting of three TEOM samplers: one at an upwind site (NA-9) and two at downwind sites (NA-8 and RO-1). NARM also operates a meteorological station that records hourly average wind parameters. Figure 2 shows the layout of the NARM monitoring network. On November 29, 2016 the NA-8 TEOM recorded a 24-hour PM_{10} concentration of 299.6 $\mu g/m^3$, exceeding the NAAQS of 150 $\mu g/m^3$.

In October of 2016, EPA revised the Exceptional Events Rule (EER). The requirements for exclusion of exceptional-event-influenced air quality data from certain regulatory decisions supersede those put forth in the 2007 EER, and are found in 40 CFR parts 50 and 51 (EPA 2016). The following analysis is aligned with the revised EER and contains all of the elements to demonstrate that the above-referenced exceedance on November 29, 2016 was caused by an exceptional high-wind event.

40 CFR §50.1 (EPA 2016) defines an exceptional event as “an event(s) and its resulting emissions that affect air quality in such a way that there exists a clear causal relationship between the specific event(s) and the monitored exceedance(s) or violation(s), is not reasonably controllable or preventable, is an event(s) caused by human activity that is unlikely to recur at a particular location or a natural event(s), and is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event.” In keeping with the EER and associated guidance, this analysis shows:

a) That an event occurred which affected air quality at NARM (Section 2.1)
b) That there was a clear causal relationship between the high-wind event and the monitored PM_{10} exceedance (Section 2.2)
c) That the exceedance was uncommon in comparison to historical concentrations (Section 2.3)
d) That the exceedance was not reasonably controllable or preventable (Section 3)

e) That the exceedance was caused by a natural event (Section 4)

This document demonstrates that the measured exceedance was caused by an exceptional event and therefore qualifies for exclusion under the EER (EPA 2016).

Figure 1: NARM Wind Rose on November 29, 2016

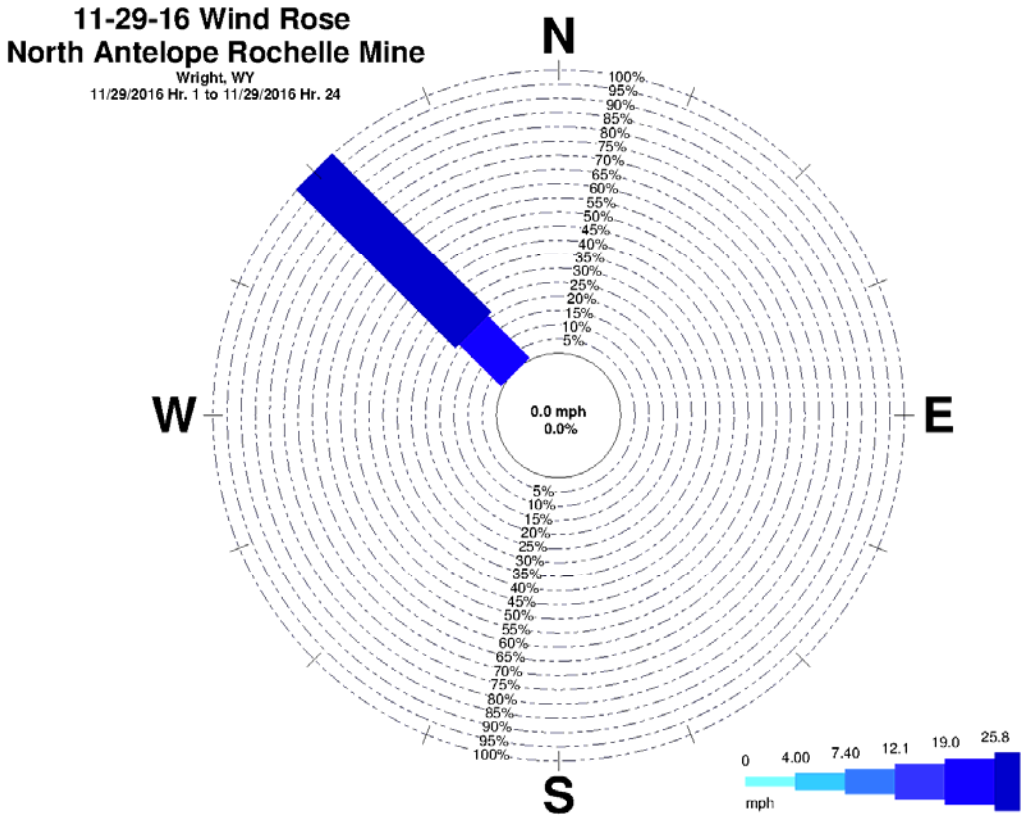
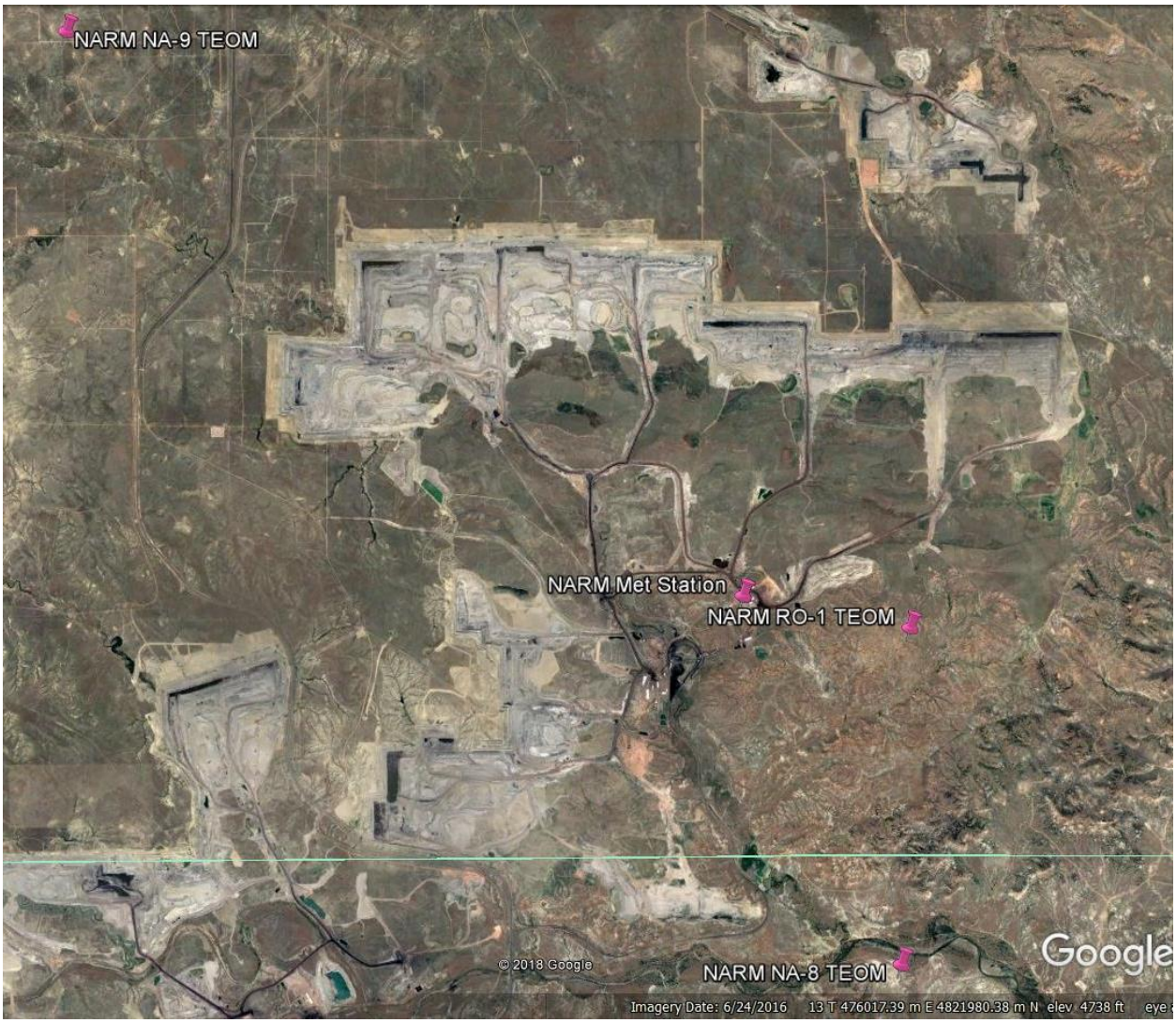


Figure 2: NARM Monitoring Locations



2.0 CLEAR CAUSAL RELATIONSHIP

40 CFR §50.14(c)(3)(iv)(B) calls for "a demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation."

2.1 An Event Occurred That Affected Air Quality

On November 29, 2016 hourly average wind speeds at the NARM meteorological monitoring station were above 25 mph most of the day. By 1:00 PM they had risen to a maximum of 40.4 mph (Table 2-1). Hourly maximum wind gusts at NARM exceeded 50 mph for 10 of the 24 hours, beginning at 4:00 AM. At 4:41 AM on November 29, 2016 the National Weather Service issued a blowing dust health alert for the PRB effective from 8:00 AM to 8:00 PM. The alert (Appendix A) was forwarded to mine operators by the Wyoming Department of Environmental Quality's Air Quality Division (AQD).

At 4:00 AM on the same date, the NA-8 TEOM recorded an hourly average PM_{10} concentration of 172 µg/m^3. The TEOM readings remained high through 1:00 PM, reaching a maximum of 1,627 µg/m^3 at 11:00 AM. Winds blew consistently out of the northwest. The daily average PM_{10} concentration (from midnight) exceeded the NAAQS at 6:00 AM and remained above 150 µg/m^3 the rest of the day. Table 2-1 lists hourly average wind speeds and wind direction at the NARM meteorological monitoring station, as well as hourly and 24-hour average (from midnight) PM_{10} concentrations at NA-8. NA-8 was taken off-line at 2:00 PM to clean ice and debris from the inlet.

NARM personnel observed high winds and blowing snow shortly after midnight on November 29, 2016. NARM responded to the high wind gusts and TEOM values by making operational adjustments and shutting down certain activities beginning at 8:00 AM. A supervisors' meeting was called at 10:00 AM to coordinate responsive actions. Water trucks were cautiously used to apply 240,000 gallons of water for dust suppression on roads and facilities, despite the fact that temperatures remained below freezing the entire day. At 10:00 AM a pit advisory was issued in the Rail Loop pits. A pit advisory is an action taken at NARM to limit traffic in the pits to minimize the generation of fugitive dust, and can also be initiated due to unsafe conditions such as low visibility. Additional mining and topsoil operations were shut down at various times during the day. Despite these efforts the NA-8 TEOM recorded a 24-hour average PM_{10}

concentration of 299.6 µg/m^3. AQD was first notified of the high winds and NA-8 TEOM readings at 12:33 PM (Appendix A).

Table 2-1: Meteorology and NA-8 PM_{10} Concentrations on November 29, 2016

Date and Time	Hourly STP (µg/m^3)	Daily Avg STP from midnight (µg/m^3)	Wind Speed (mph)	Wind Direction (°)
11/29/16 1:00	38.4	38.4	25.8	315.5
11/29/16 2:00	82.5	60.5	33.5	317.5
11/29/16 3:00	71.1	64.0	33.2	316.6
11/29/16 4:00	171.8	91.0	34.6	315.6
11/29/16 5:00	125.8	97.9	35.5	317.4
11/29/16 6:00	417.8	151.2	37.6	319.5
11/29/16 7:00	227.4	162.1	34.2	320.2
11/29/16 8:00	77.3	151.5	32.8	317.4
11/29/16 9:00	622.3	203.8	36.0	322.9
11/29/16 10:00	735.2	257.0	37.8	322.4
11/29/16 11:00	1626.9	381.5	38.0	322.2
11/29/16 12:00	978.1	431.2	39.8	322.8
11/29/16 13:00	1336.2	500.8	40.4	321.9
11/29/16 14:00		500.8	36.8	325.9
11/29/16 15:00	44.7	468.3	34.1	323.2
11/29/16 16:00	30.8	439.1	31.6	316.5
11/29/16 17:00	11.5	412.4	26.7	314.8
11/29/16 18:00	7.4	388.5	22.2	309.9
11/29/16 19:00	7.6	367.4	21.1	310.6
11/29/16 20:00	9.4	348.5	21.0	311.6
11/29/16 21:00	11.3	331.7	21.3	315.5
11/29/16 22:00	7.6	316.2	21.7	312.6
11/29/16 23:00	42.5	303.8	30.1	319.2
11/30/16 0:00	34.3	299.6	29.6	321.4

Table 2-2 shows the daily averages at all three NARM monitors on November 29, 2016. RO-1 did not exceed the NAAQS, but hourly PM_{10} concentrations reached 132.8 µg/m^3 at 2:00 PM. The Campbell County monitoring station, located south of Gillette and operated by AQD, reached 128 µg/m^3 at 12:00 PM when hourly average wind speeds there exceeded 40 mph. It appears, however, that NA-8 was disproportionately impacted by the high winds due to its location relative to mining activites at NARM (Figure 2 above), and to the near-constant northwest wind direction (Figure 1 above).

Table 2-2: NARM 24-Hour Average PM_{10} Recorded on November 29, 2016

Monitor	Monitor Type	STP Concentration (µg/m^3)	Long-Term Average (µg/m^3)
NA-8	TEOM	299.6	27.6
RO-1	TEOM	56.1	33.0
NA-9	TEOM	18.6	22.2

Section 3 below discusses various control measures taken in accordance with NARM's Real-Time Emissions Monitoring Program. Due to the high winds, these measures were not successful in keeping the 24-hour average at NA-8 below the daily NAAQS.

2.2 Relationship Between High Winds and PM_{10} Concentrations

Figure 3 shows a parallel between hourly average wind speed and hourly average PM_{10} concentration. Natural logarithms are used to attenuate the large range of PM_{10} values and to reflect the characteristic exponential relationship between wind speeds above 17 mph and PM_{10} concentrations. Note that the horizontal red line in Figure 3 represents the natural logarithm of 150 (the 24-hour NAAQS). Figure 4 illustrates this relationship, derived from partitioning over 23,000 hourly data points from NA-8 and the NARM meteorological station into 11 wind speed categories. Figure 3 graphs hourly average wind speeds for both the NARM meteorological station and the NA-8 anemometer.

For the 24-hour period the correlation coefficient between wind speed at NARM's meteorological station and PM_{10} concentration is 0.68, but this coefficient increases to 0.93 when analyzing the natural log of PM_{10} concentration. For the same period the correlation coefficient between wind speed at NA-8 and the natural log of PM_{10} concentration is also 0.93. The correlation between wind speed measurements at the two sites is 0.95. These results infer spatially consistent wind conditions and a strong causal relationship between high winds and PM_{10} concentrations.

2.3 Historical Comparison

40 CFR §50.14(c)(3)(iv)(D) calls for "Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times." Figure 5 graphs the 14-year history of daily average PM_{10} concentrations at NA-8. Among 5,200 daily averages recorded at this site through November 29, 2016, none were higher than the TEOM value recorded that day (represented by the red line). This places it in the

99.98th percentile of all recorded daily averages, and 14 standard deviations above the mean of 27.6 µg/m^3.

Figure 6 graphs the daily TEOM averages at NA-8 on the days surrounding November 29, 2016. The high PM_{10} concentration on that date was clearly abnormal for the week. Figures 5 and 6 confirm this event was extremely unusual.

Figure 3: NA-8 Wind Speed vs. PM_{10} Concentrations

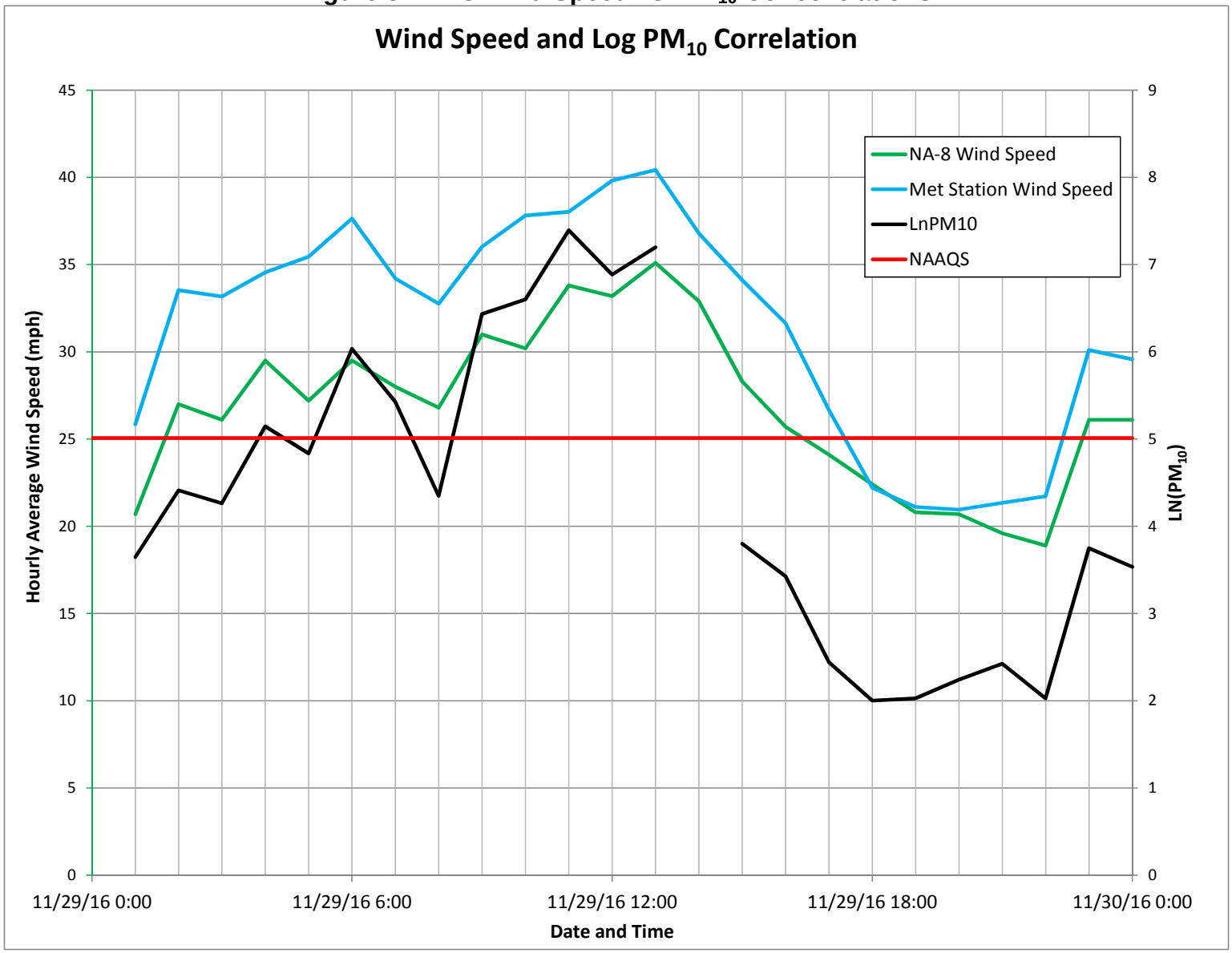


Figure 4: NA-8 Average PM_{10} Concentration by Wind Speed Category

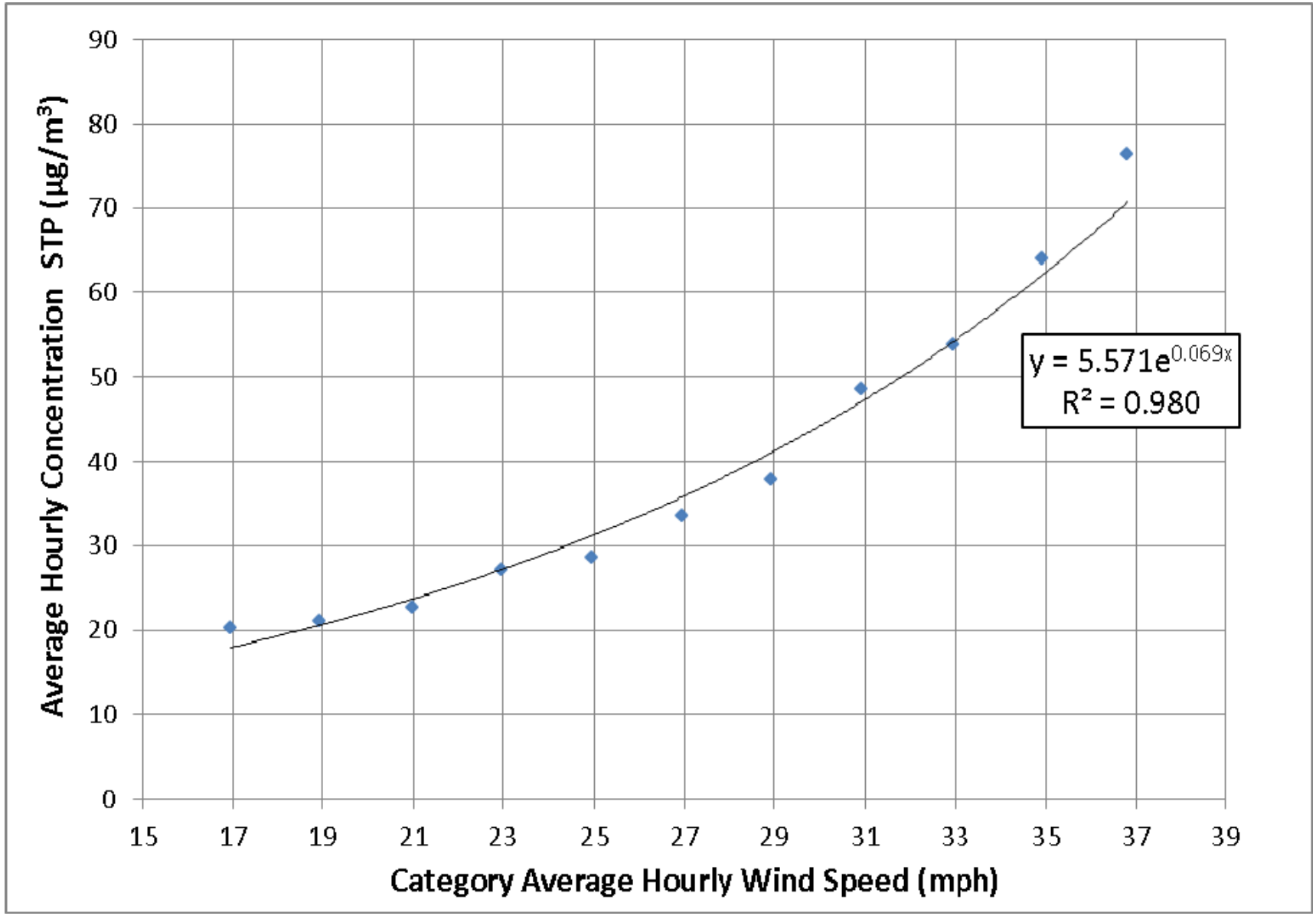


Figure 5: NA-8 TEOM Long-Term Daily Average PM_{10} Concentrations

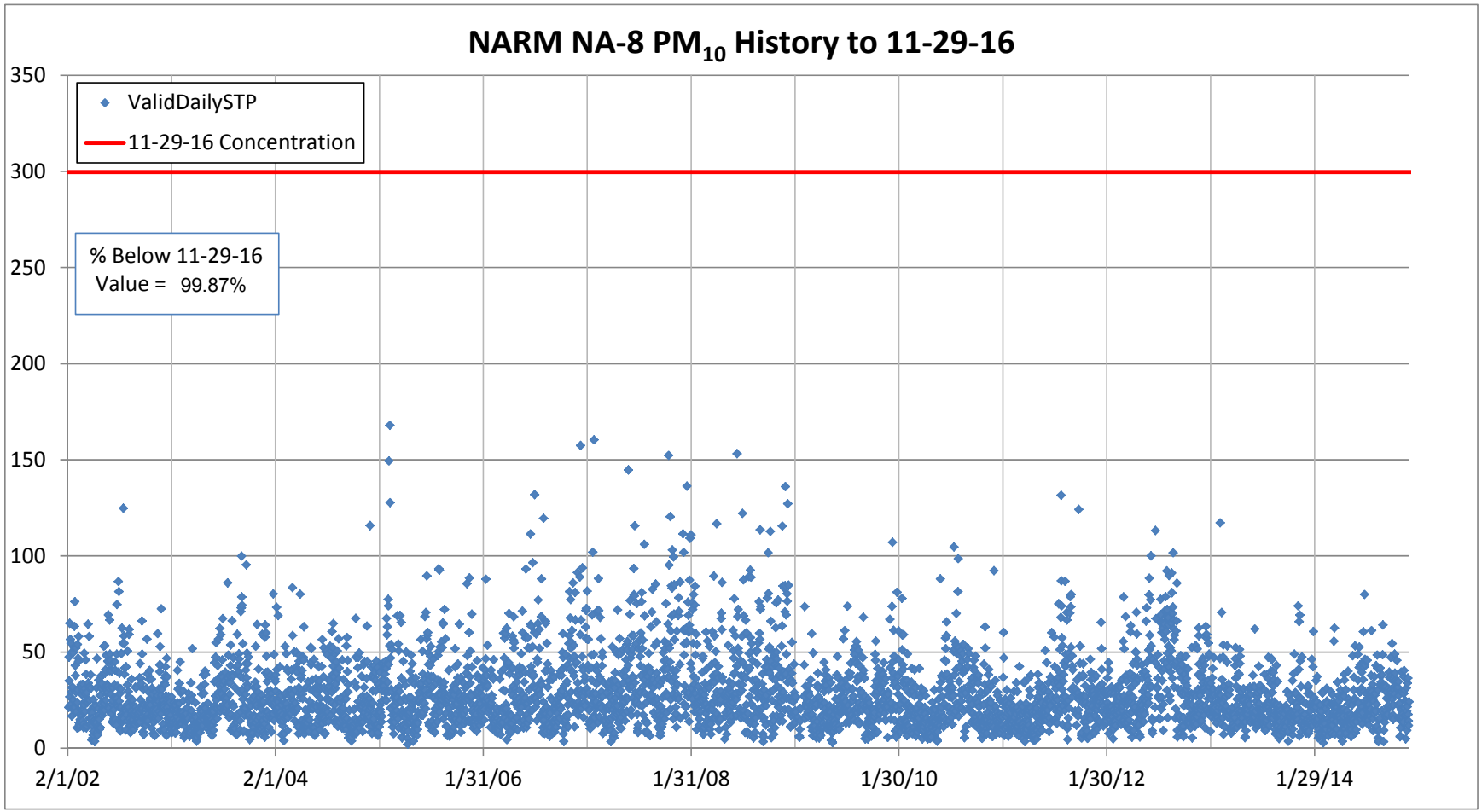
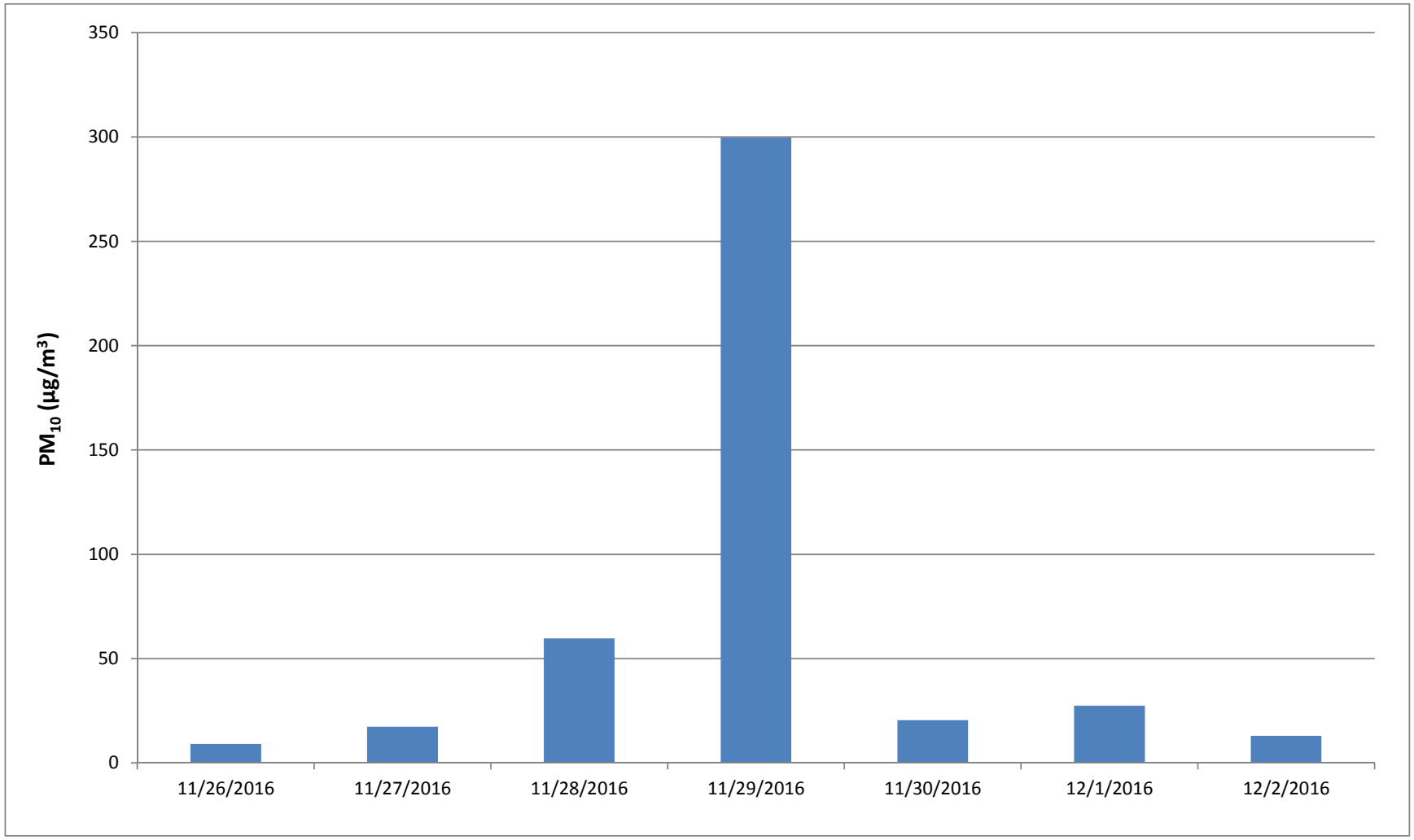


Figure 6: NA-8 TEOM Daily Average PM_{10} Concentrations, Week of 11/29/16



3.0 THE EVENT WAS NOT REASONABLY CONTROLLABLE OR PREVENTABLE

40 CFR §50.14(c)(3)(iv)(D) calls for "A demonstration that the event was both not reasonably controllable and not reasonably preventable." This section presents evidence that all reasonable actions were taken, both on and before the date of the exceedance, to minimize anthropogenic emissions at NARM. These reactive and ongoing control measures were overwhelmed, however, by the high wind event.

3.1 Reactionary Control Measures

NARM implemented several reactionary control measures in response to TEOM alarms and observations of blowing snow and dust on November 29, 2016. These measures included notifying key personnel, running water trucks, shutting down or altering select mining operations, notifying AQD, and issuing a pit advisory. Table 3-1 lists the water truck activity on November 29, 2016. Due to sub-freezing temperatures throughout the day, water trucks were deployed when it could be done safely.

Table 3-1: NARM Water Truck Activity on November 29, 2016

WATER TRUCK INFO			
ID	LOADS	SIZE	TOTAL GALLONS
704	2	20,000	40,000
714	5	40,000	200,000

Following is a summary of actions taken at NARM in response to high readings at the NA-8 TEOM on November 29, 2016.

1. Contacted supervisors regarding weather conditions at 7:00 AM.
2. Shut one dragline down at 8:00 AM.
3. At approximately 10:00 AM issued pit advisory, started water truck, and called supervisors' meeting to develop a response plan.
4. Shut down three overburden shovels at 10:00 AM.
5. Notified AQD of the high winds causing blowing snow and dust at 12:33 PM, with follow-up communications on 11/30/2016 (see AQD communications log in Appendix A).
6. Shut down McCoy contractor at 2:00 PM.
7. Began single-siding and dumping low with remaining two NARM draglines.
8. Added another water truck at 8:00 PM.

Table 3-2 lists the chronology of dispatch communications and responsive actions taken at NARM on November 29, 2016. These actions conformed to NARM's Real-Time Emissions Monitoring Program (see Appendix C).

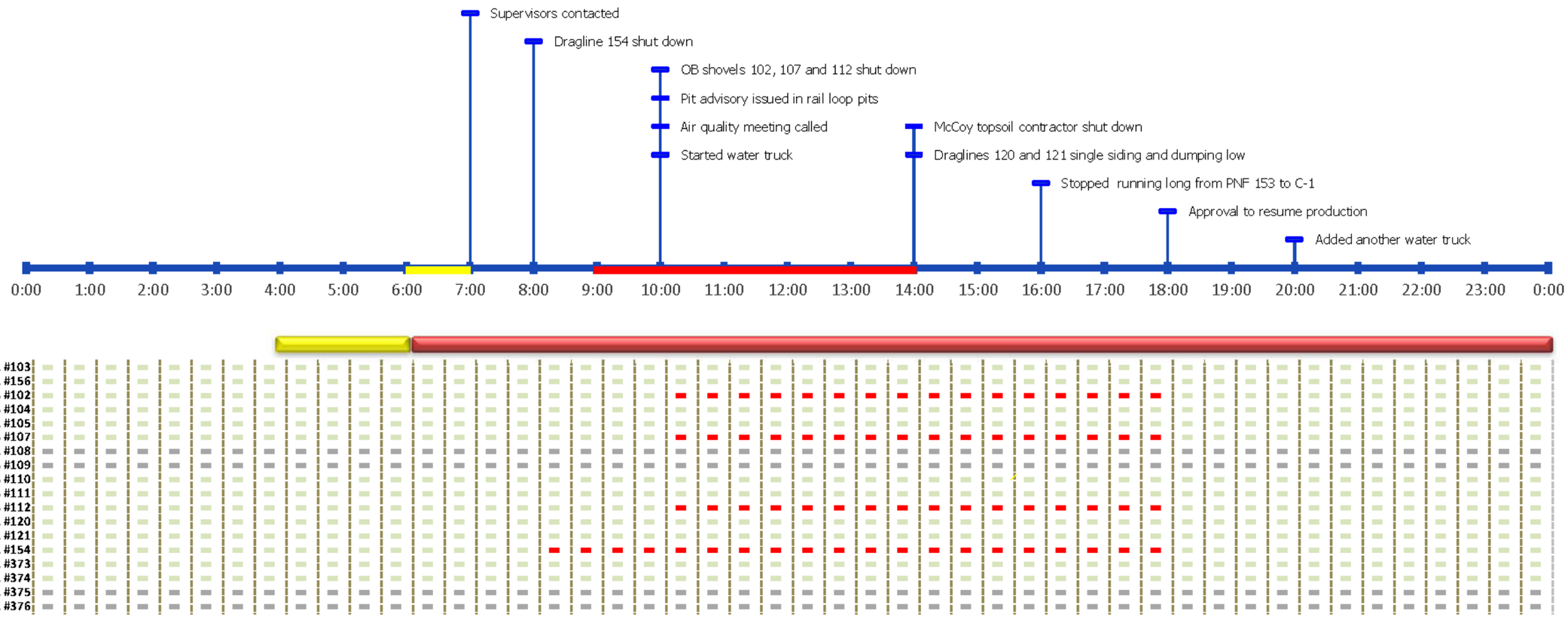
Figure 7 provides a comprehensive summary of the timeline, reactionary measures, equipment status, and NA-8 TEOM alarm status on November 29th. The first two equipment items listed, both of them coal shovels, were located upwind from NA-8 (i.e., in the reverse trace). All other equipment (denoted with **) was outside the reverse trace (see Exhibit 1). The narrow reverse trace (which was unknown at the time) made it difficult for NARM to react with just the right decisions. Many equipment items shut down on November 29th were located west-northwest of NA-8, normally upwind, but slightly outside the reverse trace on that day.

Table 3-2: NARM Observations and Reactionary Measures on November 29, 2016

DATE	TIME	Contacted				REACTIONARY MEASURES									COMMENTS
		OVERBURDEN	COAL	DRAGLINE	DRILL AND BLAST	WEATHER CONDITIONS	WATER TRUCKS	CONTRACTORS	MINE INSPECTIONS	HAUL ROUTES ADJ.	DUMP LOW	MIN. ROAD WORK	OPERATION CHANGES	PIT ADVISORY	
11/29/2016	1:00														neg reading on SC2 SC3 - windy / blowing snow
11/29/2016	2:00														neg reading on SC2 SC3 - windy / blowing snow -OB runs started running again.
11/29/2016	3:00														neg reading on SC2 SC3 - windy / blowing snow
11/29/2016	4:00														neg reading on SC2 - windy / blowing snow
11/29/2016	5:00														neg reading on SC2 - windy / blowing snow
11/29/2016	6:00														neg reading on SC1 - windy / blowing snow - Status 2.0 on NA8
11/29/2016	7:00	x	x	x	x										shiftchange. Snowing and blowing.
11/29/2016	8:00	x	x	x	x										wind speed 32 MPH out of the NW. 154 Dragline down
11/29/2016	9:00	x	x	x	x										wind speed 32 MPH out of the NW. 154 Dragline down.
11/29/2016	10:00	x	x	x	x		x	x	x	x			x	x	wind speed 36 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Called meeting as per Air Quality SOP.
11/29/2016	11:00	x	x	x	x									x	wind speed 38 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Called meeting as per Air Quality SOP. Bryan told us to stay down until he calls the District.
11/29/2016	12:00	x	x	x	x									x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits.. Bryan told us to stay down until he calls the District.
11/29/2016	13:00	x	x	x	x									x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Bryan told us to stay down until he calls the District.
11/29/2016	14:00	x	x	x	x			x			x		x	x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Bryan told us to stay down until he calls the District. Shut down McCoy for the rest of dayshift and told them to cancel nightshift crew. Have 120 and 121 single siding and dumping low.
11/29/2016	15:00							x			x			x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Bryan told us to stay down until he calls the District. Shut down McCoy for the rest of dayshift and told them to cancel nightshift crew. Have 120 and 121 single siding and dumping low.
11/29/2016	16:00							x			x		x	x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits.. Bryan told us to stay down until he calls the District. Shut down McCoy for the rest of dayshift and told them to cancel nightshift crew. Have 120 and 121 single siding and dumping low.
11/29/2016	17:00							x			x			x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Bryan told us to stay down until he calls the District. Shut down McCoy for the rest of dayshift and told them to cancel nightshift crew. Have 120 and 121 single siding and dumping low.
11/29/2016	18:00							x			x		x	x	wind speed 40 mph out of NW. Shut down 102,107,154 and 112. Pit advisory in the railloop pits. Bryan told us to stay down until he calls the District. Shut down McCoy for the rest of dayshift and told them to cancel nightshift crew. Have 120 and 121 single siding and dumping low. Bryan Hansen called and said we are on to run.
11/29/2016	19:00	x	x	x	x	x		x						x	wind speed 40 mph out of NW. Pit advisory in the railloop pits. Shut down McCoy for the rest of dayshift and told them to cancel nightshift crew. Have 120 and 121 single siding and dumping low. Bryan Hansen called and said we are on to run.
11/29/2016	20:00	x		x	x	x	x	x					x		Added another water truck to run. NA-9 showing negative number (-0.10)
11/29/2016	21:00							x							
11/29/2016	22:00							x							NA-9 showing negative number (-4.00)
11/29/2016	23:00							x							NA-9 showing negative number (-4.20)
11/30/2016	0:00							x							

Figure 7: NA-8 Alarm Levels, Response Timeline and Equipment Status on 11/29/16

NA-8 Event Timeline



November 29, 2016

1hr Alarms
shown on timeline

Low Level 250-500 µg/m^3

High Level 500+ µg/m^3

24hr Alarms
shown beneath timeline

Low Level 75-100 µg/m^3

High Level 100+ µg/m^3

Equipment Activity
- Normal Production
- Normal Shutdown
- Reactionary Shutdown

Equipment Abbreviations
CL = Coal Loader
DL = Dragline
OB = Overburden Shovel

Notes
1. Mine and crew supervisors notified each hour of alarm
2. Wind speed and direction analyzed each hour of alarm
3. All equipment on the timeline is within the reverse trace from NA-8 TEOM unless noted with a double asterisk (**)

3.2 Ongoing Control Measures

EPA recommends that a basic controls analysis should identify all contributing emission sources in upwind areas, whether anthropogenic or natural, and provide evidence that those sources were reasonably controlled (EPA 2013). Generally speaking, the area upwind from the NA-8 monitor includes natural areas (i.e., native grassland), anthropogenic sources at neighboring surface mines, anthropogenic sources not associated with mining, and anthropogenic sources at NARM. The principal NARM sources include earth-moving activities, coal excavation, hauling and processing, and wind erosion from areas disturbed by mining.

Control of the NARM anthropogenic sources is achieved through reactionary measures taken during episodes of elevated PM_{10} concentrations (Section 3.1 above) and through ongoing Best Management Practices (BMP). This section addresses the ongoing controls applied to anthropogenic emission sources at NARM. It specifies conditions in NARM's Air Quality Permit related to fugitive dust control, and demonstrates compliance with these conditions on and before November 29, 2016.

3.2.1 Reverse Trace Analysis

Sources at NARM that likely contributed significantly to the PM_{10} NAAQS exceedance measured by the NA-8 monitor on November 29, 2016 were identified by constructing a "reverse trace" upwind from the NA-8 monitor. This reverse trace spans the predominant wind directions (316.6º to 322.9º) during the period of high wind speeds on that day. The result is shown in Exhibit 1, which also identifies equipment locations and land status on November 29th.

Exhibit 1 (separate from this document) identifies categories of disturbed surface areas at NARM over which high winds blew toward the NA-8 monitor on November 29, 2016. Some of these areas were likely contributors to the measured exceedance at NA-8. As the high wind event began on November 29, the following BMP were in place on the disturbed areas identified in Exhibit 1:

- A combined 282 acres (of a possible 282 acres) of various facilities, rail and hydrologic structures were controlled with BMP on November 29 by prior use

of one or more of the following methods: revegetation, riprap, chemical treatments, or pavement.

- Roads within the reverse trace accounted for 262 acres. All coal haul roads and active overburden haul roads were controlled on and prior to November 29 by chemical treatment and/or watering. Pavement was used on mine access roads.
- Topsoil had been recently replaced on a total of 3 acres of reclaimed lands. These acres had been scarified in preparation for revegetation.
- A total of 114 acres of recently regraded backfill had been ripped in preparation for topsoil replacement.

In addition to the above disturbed lands at NARM for which BMP is expressly required, similar control measures were also in place on November 29, 2016 for the following disturbed areas over which high winds passed toward the NA-8 monitor (note that a total of 823 acres of active benches, active backfill, and spoil not yet graded, were not and could not be reasonably controlled):

- 143 acres of lands that had been stripped of topsoil in advance of the pits. All of this disturbed ground had been scarified.
- A combined 174 acres of overburden and topsoil stockpiles that had been graded and scarified.
- 1,230 acres of revegetated land.

Table 3-3 itemizes the controlled and uncontrolled disturbed acreage within the NA-8 reverse trace at NARM on November 29, 2016. In short, of the 3,031 acres that had been disturbed by NARM within the reverse trace area, reasonable controls were in place on 2,209 or 73% of those acres. No controls were possible for the remaining 823 acres within the NA-8 reverse trace as noted above. Therefore, all reasonably controllable acres were controlled.

Table 3-3: Status of Acreage Within NA-8 Reverse Trace on 11/29/16

Class Name	Backtrace Angle	Controlled Acres	Uncontrolled Acres
Topsoil removed	315.6° - 322.9°	143	
Benches	315.6° - 322.9°		243
To be backfilled	315.6° - 322.9°		452
To be graded	315.6° - 322.9°		128
Graded (to be topsoiled)	315.6° - 322.9°	114	
Topsoiled (to be revegetated)	315.6° - 322.9°	3	
Revegetated (held for release)	315.6° - 322.9°	1,230	
Overburden stockpiles	315.6° - 322.9°	61	
Topsoil stockpiles	315.6° - 322.9°	114	
Roads	315.6° - 322.9°	262	
Railroads	315.6° - 322.9°	29	
Facilities	315.6° - 322.9°	177	
Dams, ditches, ponds	315.6° - 322.9°	76	
Total Acres	315.6° - 322.9°	2,209	823

3.2.2 Air Quality Permit Compliance

EPA recommends that a basic controls analysis should identify all contributing emission sources in upwind areas, whether anthropogenic or natural, and provide evidence that those sources were reasonably controlled (EPA 2013). Control of potentially contributing sources is achieved through reactionary measures taken during episodes of elevated PM_{10} concentrations (Section 4.3.3 above) and through ongoing Best Management Practices (BMP). This section addresses the ongoing controls applied to anthropogenic emission sources at NARM. It specifies conditions in NARM's Air Quality Permit related to fugitive dust control, and demonstrates compliance with these conditions on and before November 29, 2016.

On November 29 NARM was in compliance with Air Quality Permit P0021831 (WDEQ 2016b), which requires the following BMP for active haul roads and for disturbed areas:

- Active long-term coal haul roads must be treated with dust control chemicals in addition to water (Condition 13), and maintained continuously while in use.

- Active long-term coal haul roads must be treated with dust control chemicals in addition to water (Condition 13), and maintained continuously while in use.
- Active short-term mine haul roads must be treated with water and/or chemical dust suppressants (Condition 14).
- A report addressing road dust control measures and disturbed acreage must be submitted to AQD annually (Condition 15).
- Topsoiled areas ≥ 150 contiguous acres that will not be revegetated within 60 days of topsoil laydown and regraded backfill areas ≥ 150 contiguous acres that will not be topsoiled within 60 days must, as soon as feasible, be ripped or chiseled to create a roughened surface, or be seeded with a temporary vegetative cover or otherwise be effectively stabilized against wind erosion (Condition 16a).
- Topsoiled areas < 150 contiguous acres that will not be immediately revegetated and regraded backfill areas < 150 acres that will not be topsoiled for an extended period of time must, as soon as feasible, be ripped or chiseled to create a roughened surface, or be seeded with a temporary vegetative cover or otherwise be effectively stabilized against wind erosion (Condition 16b).
- At least 18% of the open acres at NARM must be stabilized against wind erosion on a calendar year basis (Condition 17).

NARM applied 888,645 gallons of 30% magnesium chloride solution to haul roads and facility areas during 2016 (Peabody 2017b). Approximately 30 miles of haul roads and light duty roads received chemical and water treatment throughout the year. An estimated 52 miles of haul roads and light duty roads were not treated with magnesium chloride but were watered as necessary throughout the year. Pit roads were treated with water due to their temporary nature. A total of 9 water trucks were active during the year, logging 29,351 total hours of duty. In addition to controlling dust from unpaved roads, NARM applied BMP control measures to 6,114 acres out of a total of 10,558 open acres during 2016 (Peabody 2017b).

3.2.3 Air Quality Inspection

After an annual inspection of NARM on August 25, 2016 AQD reported no air quality compliance issues (WDEQ 2016a). All reporting and record keeping activities specified in NARM's air quality permit were found to be in compliance. Truck dumps were also noted to be in compliance with opacity limits (see opacity test results in Appendix B).

Haul roads were reported to be in good condition with no road dust observed. AQD noted the only air quality concern was the Circuit 3 stilling shed; however the truck dump was shut down in order to repair the stilling shed. Overall, the inspection report validated NARM's ongoing dust control measures.

3.2.4 Influence from Neighboring Mines

Neighboring mines include the School Creek Mine (SCM), the Black Thunder Mine (BTM) and the Antelope Mine (ACM). SCM borders NARM on the north, with BTM located north of SCM. ACM borders NARM on the south. None of the BTM, SCM, or ACM lands were in the NA-8 reverse trace on November 29 (Exhibit 1). Therefore, the impact of these mines on the NA-8 exceedance was most likely negligible. It is therefore likely that the primary contributors to the NA-8 exceedance were natural sources and mining sources reasonably controlled by Peabody Powder River Mining, LLC.

4.0 NATURAL EVENT OR HUMAN ACTIVITY UNLIKELY TO RECUR

40 CFR §50.14(c)(3)(iv)(E) calls for "A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event." This section provides evidence that the exceptional event on November 29, 2016 qualifies as a natural event and therefore meets this criterion in the EER.

4.1 Natural Causes

The Campbell County monitoring station, operated by AQD south of Gillette, measures PM_{10} concentrations upwind from the coal mines in the southern PRB. While this monitor did not exceed the 24-hour NAAQS, it recorded a high hourly average of 128 $\mu g/m^3$ at 12:00 PM on November 29, 2016. Average wind speed for that hour was 40.5 mph. As discussed in Section 2.1 above, the National Weather Service in Rapid City issued a blowing dust health alert for the PRB effective from 8:00 AM to 8:00 PM (Appendix A). This evidence suggests that extremely high sustained winds throughout the region created airborne dust from natural sources that most likely contributed significantly to the exceedance at NA-8.

4.2 Reasonably Controlled Sources

Since the downwind monitors at NARM measured higher PM_{10} concentrations than the upwind monitor (Table 2-2), it is reasonable to assume that anthropogenic emission sources from surface mining contributed to the NA-8 exceedance. These sources most likely included unpaved roads, earth moving equipment, and wind erosion on disturbed lands. Section 3.1 above details the reactionary controls applied to NARM on November 29, 2016. Section 3.2 discusses the ongoing control measures leading up to that date. It confirms that BMP had been applied to unpaved roads and portions of the open acreage that could be safely controlled, and that mining activities were curtailed on the date of the exceedance. These control measures mitigated the impact from NARM sources to a reasonable extent.

The EER (EPA 2016) states, "For purposes of the definition of a natural event, anthropogenic sources that are reasonably controlled shall be considered to not play a direct role in causing emissions." The EER elaborates on this inclusion of anthropogenic emissions in a natural event. "This is the case regardless of the magnitude of emissions

generated by these reasonably controlled anthropogenic sources and regardless of the relative contribution of these emissions and emissions arising from natural sources in which human activity has no role.” Since the application of reasonable controls has been demonstrated for NARM on November 29, the presence of human-caused emissions does not alter the claim that the NA-8 exceedance constitutes a natural event.

5.0 RECOMMENDED ACTION

The preamble to the EER (EPA 2016) states that “EPA will review each request for data exclusion under the Exceptional Events Rule on a case-by-case basis using a weight of evidence approach.” It has been demonstrated that the NA-8 TEOM exceedance meets all of the criteria for an Exceptional Event as enumerated in the EER. Based on the comprehensive evidence presented above, Peabody Powder River Mining, LLC requests that the 24-hour PM_{10} average recorded at the NA-8 TEOM on November 29, 2016 be flagged and excluded from regulatory decisions in accordance with the Exceptional Events Rule.

6.0 REFERENCES

EPA 2016, Exceptional Events Final Rule, 40 CFR 60 Parts 50 and 51, USEPA, October 3, 2016.

EPA 2013, Memorandum on Interim Guidance to Implement Requirements for the Treatment of Air Quality Monitoring Data Influenced by Exceptional Events, USEPA, May 2013.

Peabody 2017a, Peabody Powder River Mining, LLC, North Antelope Rochelle Mine Ambient Monitoring Network Justification, Submitted to WDEQ March 2017.

Peabody 2017b, Annual Summary Report, Peabody Powder River Mining, LLC North Antelope Rochelle Mine, Submitted to Wyoming Department of Environmental Quality, Air Quality Division, March 31, 2017.

WDEQ 2016a, Annual Inspection Report, Peabody Powder River Mining, LLC North Antelope Rochelle Mine, Wyoming Department of Environmental Quality, Air Quality Division, Inspected August 25, 2016.

WDEQ 2016b, North Antelope Rochelle Mine Air Quality Permit P0021831 (updated from MD-16282), Wyoming Department of Environmental Quality, Air Quality Division, July 25, 2016.

APPENDIX A – AQD CORRESPONDENCE

From: Blake, Chris
To: "Brad Steidley"
Subject: RE: NARM - Air Quality - 11/29/16
Date: Wednesday, November 30, 2016 1:50:00 PM

Brad,

Yes. Unfortunately it was an exceedance at the NA-8 monitor. I do not have the final 24-hr average as at least one hour will be invalid due to a temperature fault, but the final result will most likely be over 250 anyway. And a preliminary look at the data shows 10 hours of 50+ mph wind gusts with most of the day consistently experiencing 30+ mph constant winds.

I will work with Phil Dinsmoor in our Caballo permitting office and with IML to compile a High Wind Event demonstration to submit an Exceptional Event Flag Request.

I will also be in contact with you to make sure that I don't miss anything.

Thank you,

-Chris

From: Brad Steidley [mailto:brad.steidley@wyo.gov]
Sent: Wednesday, November 30, 2016 8:06 AM
To: Blake, Chris
Subject: Re: NARM - Air Quality - 11/29/16

Thanks Chris,

Any word yet if there was/was not an exceedance?

On Tue, Nov 29, 2016 at 12:33 PM, Blake, Chris <CBlake@peabodyenergy.com> wrote:
Brad and Tanner,

I just left a voicemail for Brad a few minutes ago regarding the air quality here at NARM.

High Wind Event at the south end of the PRB. Sustained winds 30-40 mph; gusts 50 - 60 mph. AQ Action plan was implemented.

I will call tomorrow when we have all of the hourly readings in and recorded for today.

-Chris

North Antelope Rochelle Mine (NARM)
Peabody Powder River Operations, LLC (Peabody Energy)
Environmental Supervisor | 341A Antelope Road | Caller Box 3035 | Gillette, WY 82717-3035
307.464.4509 (☎) | 307.464.4631 (🖷) | cblake@peabodyenergy.com (✉)

--

Brad Steidley
WDEQ-AQD
Compliance Program
Sheridan District Office

Ronn Smith

From: Tanner Shatto <tanner.shatto@wyo.gov>
Sent: Tuesday, November 29, 2016 7:32 AM
To: Amber Potts; Anthony Felton; Austin Woodward; Barbara VanHorn; Bernadette Hinshaw; Bill Jenkins; Blake, Chris; Bob Edwards; Brad Steidley; Brenda Green; Brent Helms; Hansen, Bryan; Brian Percifield; CAB_Guards; Cara Keslar; Cary Schmidt; Casey Kinnan; Chris Hanify; Clay Sondgeroth; Corey Ealy; Craig Weber; DaLyn Hugo; Daniel Baker; Daniel Sharon; Darla Potter; Darryl Maunder; Dave Kline; Wadsack, David; DL-RawhideSecurity; Dustin Schmidt; Elliot Basner; Gordan Shinkle; Greg Passini; Gretchen Anderson; Haley Sack; Henry Pfenning; Vauthier, Jaye B; Jamie O'Dell; Jane Glaser; Jeffrey Hancock; John Gallatin; Jordan Hoff; Justin Blake; K Hampleman; Keith Guille; Kellen Gatlin; Kim Deti; KOAL; Kristina Hooper; Lars Lone; Laura Ackermann; Laura Blake; Lecia Craft; Lynn Sweet; Mark Thrall; Mdispatcher; Michael Garry; Miles Buckingham; Monica Williams; DL-NARMSecurity; Raymond Burger; Scott Norman; Rexroat, Scott E.; Shane Bennett; Stevan Mueller; Tim Mendenhall; Tina Hutt; Tracey Jones; Travis Connally; Vincent Davis; Will Collier; William Stewart
Subject: Fwd: Blowing Dust Health Alert

---------- Forwarded message ----------
From: **Eric Helgeson - NOAA Federal** <eric.helgeson@noaa.gov>
Date: Tue, Nov 29, 2016 at 4:41 AM
Subject: Blowing Dust Health Alert
To: Tanner Shatto <tanner.shatto@wyo.gov>

WYZ054-055-300300- AIR QUALITY ALERT MESSAGE WYOMING AIR QUALITY DIVISION RELAYED BY THE NATIONAL WEATHER SERVICE RAPID CITY SD 439 AM MST TUE NOV 29 2016 ...BLOWING DUST HEALTH ALERT IN EFFECT FOR POWDER RIVER BASIN OF NORTHEASTERN WYOMING FROM 800 AM MST TO 800 PM MST... NORTHWEST WINDS WILL INCREASE THIS MORNING TO 30 TO 40 MPH WITH GUSTS TO 55 MPH. WINDS SPEEDS WILL DECREASE LATE THIS EVENING. THE WYOMING AIR QUALITY DIVISION RECOMMENDS THE ELDERLY, YOUNG CHILDREN, AND INDIVIDUALS WITH RESPIRATORY PROBLEMS AVOID EXCESSIVE PHYSICAL EXERTION AND MINIMIZE OUTDOOR ACTIVITIES DURING THIS TIME. ALTHOUGH THESE PEOPLE ARE MOST SUSCEPTIBLE TO HEALTH IMPACTS, THE AIR QUALITY DIVISION ALSO ADVISES THAT EVERYONE SHOULD AVOID PROLONGED EXPOSURE TO THE POOR AIR QUALITY CONDITIONS. $$

--
Eric Helgeson, Meteorologist
NWS Rapid City, SD

--
Tanner B. Shatto
District 3 Engineer
Wyoming Department of Environmental Quality
Air Quality Division
Direct: (307)675-5626
Office: (307)673-9337
Fax: (307)672-2213
tanner.shatto@wyo.gov

APPENDIX B – OPACITY TEST RESULTS

WEEKLY INSPECTIONS

TRUCK DUMP CONTROL SYSTEMS

Date: 11-29-16 **CIRCUIT** 1 2 3 4

Unit #: 37008

Stilling shed:

Are there any problems with:	NO	YES
1. The condition of the tin?	✓	
2. The condition of the belting?	✓	
3. The condition of the Rollup Door?	N/A	
4. The condition of the stilling shed back wall?	✓	

The Atomizers/Foggers System:

Are there any problems with:

1. Leaks in the lines?	✓	
2. The filters?	✓	
3. No fog at the end of the hood?	✓	

NOTE: If any question was answered "YES," indicate the corrective actions or circumstances below.

Corrective actions/ Comments:

Signature: [signature]

WEEKLY INSPECTIONS

TRUCK DUMP CONTROL SYSTEMS

Date: 11-29-16 **CIRCUIT** **1** **2** **3** **4** 5

Unit #: 34836

Stilling shed:

Are there any problems with:	**NO**	**YES**
1. The condition of the tin?	X	
2. The condition of the belting?		X
3. The condition of the Rollup Door?	X	
4. The condition of the stilling shed back wall?	X	

The Atomizers/Foggers System:

Are there any problems with:		
1. Leaks in the lines?	X	
2. The filters?	X	
3. No fog at the end of the hood?	X	

NOTE: If any question was answered "YES," indicate the corrective actions or circumstances below.

Corrective actions/ Comments:

East Side, ~~Blt~~ Belting Came loose due to Wind. Barricaded off area till it can be Repaired

Signature: [signature]

WEEKLY INSPECTIONS

TRUCK DUMP CONTROL SYSTEMS

Date: 11-29-16 **CIRCUIT** 1 2 3 4 5

Unit #: 34837

Stilling shed:

Are there any problems with:	NO	YES
1. The condition of the tin?	X	
2. The condition of the belting?	X	
3. The condition of the Rollup Door?		
4. The condition of the stilling shed back wall?	X	

The Atomizers/Foggers System:

Are there any problems with:

1. Leaks in the lines?	X	
2. The filters?	X	
3. No fog at the end of the hood?	X	

NOTE: If any question was answered "YES," indicate the corrective actions or circumstances below.

Corrective actions/ Comments:

Signature: _____

WEEKLY INSPECTIONS

TRUCK DUMP CONTROL SYSTEMS

Date: 11-29-16 **CIRCUIT** 1 2 [3] 4 5

Unit #: 33835

Stilling shed:

Are there any problems with:	NO	YES
1. The condition of the tin?	X	
2. The condition of the belting?	X	
3. The condition of the Rollup Door?		
4. The condition of the stilling shed back wall?	X	

The Atomizers/Foggers System:

Are there any problems with:

1. Leaks in the lines?	X	
2. The filters?	X	
3. No fog at the end of the hood?	X	

NOTE: If any question was answered "YES," indicate the corrective actions or circumstances below.

Corrective actions/ Comments:

Signature: [signature]

WEEKLY INSPECTIONS

TRUCK DUMP CONTROL SYSTEMS

Date: 11-29-16 **CIRCUIT** 1 2 3 4 5

Unit #: 33517

Stilling shed:

Are there any problems with:	NO	YES
1. The condition of the tin?	X	
2. The condition of the belting?	~~X~~	X
3. The condition of the Rollup Door?		
4. The condition of the stilling shed back wall?	X	

The Atomizers/Foggers System:

Are there any problems with:

1. Leaks in the lines?	X	
2. The filters?	X	
3. No fog at the end of the hood?	X	

NOTE: If any question was answered "YES," indicate the corrective actions or circumstances below.

Corrective actions/ Comments:

Belting on west side came loose due to wind.

Signature: [signature]

STATE OF WYOMING
AIR QUALITY DIVISION
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME: Peabody		
STREET ADDRESS: NARM Circuit #12		
CITY	STATE	ZIP

PROCESS EQUIPMENT: Truck Dump	
CONTROL EQUIPMENT: Stilling Shed	

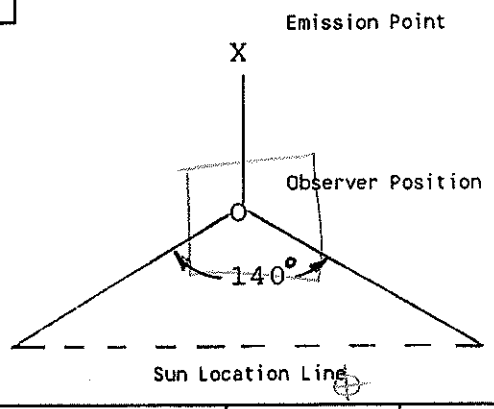
DESCRIBE EMISSION POINT: Above/Side Stilling Shed	
HEIGHT ABOVE GROUND LEVEL: 50 ft	
DISTANCE: 100-150 Yds	DIRECTION: East

DESCRIBE EMISSIONS: Coal Dust	
COLOR: Black	STEAM PLUME: NA
POINT IN PLUME OPACITY DETERMINED: NA	

PLUME BACKGROUND: Sky	
COLOR: Blue/White	SKY CONDITIONS: Cloudy
WIND SPEED: 4	WIND DIRECTION: 196°
AMBIENT TEMP: 60 °F	

NORTH ←

SOURCE LAYOUT SKETCH



Stack with plume | Sun | Wind →

DATE OBSERVED		START TIME		END TIME	
S / M	0	15	30	45	COMMENTS
1	0	5	5	0	838 Truck
2	0				" "
3	0	5	5	0	Truck 214
4	5	5			" "
5	0	0	10	5	Truck 210
6					" "
7					
8					
9					

Sum of numbers recorded =

Total number of readings =

$$\text{OPACITY} : \frac{\text{Sum of numbers recorded}}{\text{Total number of readings}} = \frac{45}{15} = 3.0 \text{ \% OPACITY}$$

I have received a copy * SIGNATURE	
TITLE	DATE

OBSERVER: Brad Stanley	
DEPT OF ENVIRONMENTAL QUALITY--AIR QUALITY	DATE: 8/25/16

*By signing this form, I attest only that I have received a copy of this opacity reading. My signature does not affirm the accuracy of the reading results or procedure.

STATE OF WYOMING
AIR QUALITY DIVISION
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME: Peabody		
STREET ADDRESS: NARM Circuit 4		
CITY	STATE	ZIP

PROCESS EQUIPMENT: Truck Dump	
CONTROL EQUIPMENT: Stilling Shed	

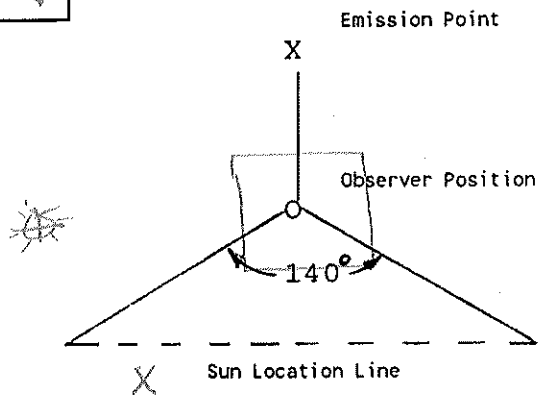
DESCRIBE EMISSION POINT: Above Side Stilling ~~Shed~~ Shed	
HEIGHT ABOVE GROUND LEVEL: 50 ft	
DISTANCE: 150 yds	DIRECTION: South

DESCRIBE EMISSIONS: Black Coal Dust	
COLOR: Black	STEAM PLUME: NA
POINT IN PLUME OPACITY DETERMINED: NA	

PLUME BACKGROUND: Sky	
COLOR: Blue/Grey	SKY CONDITIONS: Cloudy
WIND SPEED	WIND DIRECTION
AMBIENT TEMP: 58°F	

NORTH ↓

SOURCE LAYOUT SKETCH



Stack with plume | Sun | Wind →

DATE OBSERVED		START TIME		END TIME	
S / M	0	15	30	45	COMMENTS
1	0	5	15	10	Truck 209
2	5	0	0	0	" "
3	0	10	20	5	Truck 212
4	0	0			" "
5	0	10	20	10	Truck 207
6	0	0			
7					
8					
9					

Sum of numbers recorded = 110

Total number of readings = 16

$$\text{OPACITY} : \frac{\text{Sum of numbers recorded}}{\text{Total number of readings}} = \frac{110}{16} = 6.875\% \text{ OPACITY}$$

I have received a copy * SIGNATURE	
TITLE Env Mgr	DATE 8/25/16

OBSERVER Brad Stuckey	
DEPT OF ENVIRONMENTAL QUALITY--AIR QUALITY	DATE 8/25/16

*By signing this form, I attest only that I have received a copy of this opacity reading. My signature does not affirm the accuracy of the reading results or procedure.

STATE OF WYOMING
AIR QUALITY DIVISION
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME: School Creek Mine		
STREET ADDRESS:		
CITY: Wright	STATE: WY	ZIP:

PROCESS EQUIPMENT: Truck Dump	
CONTROL EQUIPMENT: Stilling Shed	

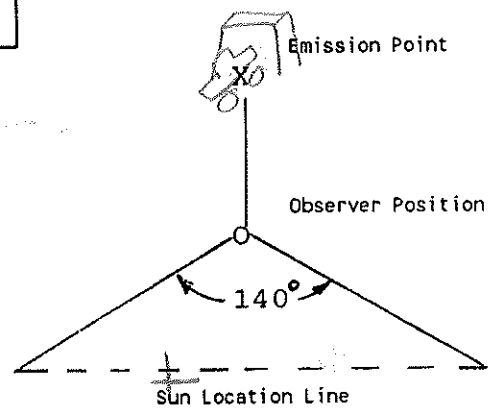
DESCRIBE EMISSION POINT: Dust around the stilling Shed		
HEIGHT ABOVE GROUND LEVEL: 50ft.		
DISTANCE: 200ft	DIRECTION: West	

DESCRIBE EMISSIONS: Coal Dust		
COLOR: Black	STEAM PLUME: N/A	
POINT IN PLUME OPACITY DETERMINED		

PLUME BACKGROUND: Partly Cloudy Sky		
COLOR: White/Grey/Blue	SKY CONDITIONS: Partly Cloudy	
WIND SPEED: 5	WIND DIRECTION: 20°	
AMBIENT TEMP: 56		

NORTH →

SOURCE LAYOUT SKETCH



Stack with plume | Sun | Wind →

DATE OBSERVED: 8/25/16	START TIME: 1104	END TIME: 1120

S / M	0	15	30	45	COMMENTS
1	0	0	0	0	#279
2	5	5	0	0	Very slow dump
3	0	0	0		≈ 3min
4	0	5	5	0	# 278
5	0	0	0	0	
6	0				
7	0	5	5	5	# 228
8	0	0	5	0	
9					

Sum of numbers recorded = 40

Total number of readings = 288

OPACITY : $\frac{\text{Sum of numbers recorded}}{\text{Total number of readings}} = \frac{40}{288} = 13.42\%$ OPACITY

I have received a copy * SIGNATURE:	
TITLE: SR. Analyst	DATE: 8/25/16

OBSERVER: John Gallant	
DEPT OF ENVIRONMENTAL QUALITY--AIR QUALITY	DATE: 8/25/16

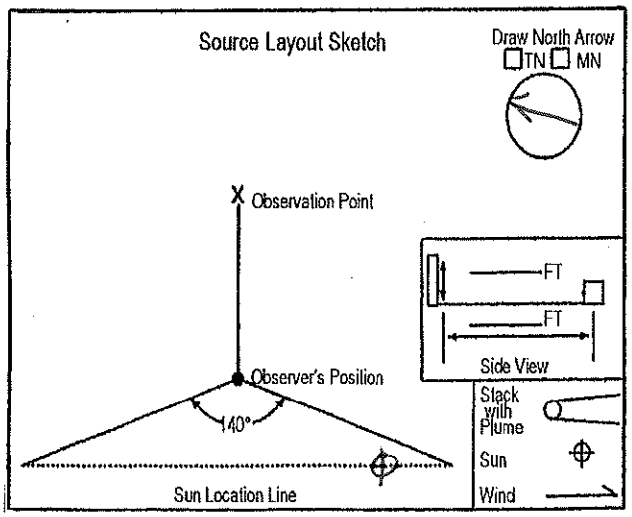
*By signing this form, I attest only that I have received a copy of this opacity reading. My signature does not affirm the accuracy of the reading results or procedure.

3RD QUARTOR 2016

CIRCUIT #: 1

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 80'		
HEIGHT RELATIVE TO OBSERVER 80'		
DISTANCE OF EMISSION POINT 120'		
DIRECTION TO EMISSION POINT NE		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR		
AMBIENT TEMPERATURE 65° F		
WIND SPEED 18 mpH		
WIND DIRECTION NW		
SKY CONDITIONS Clear		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
9-26-16	12:07	12:20

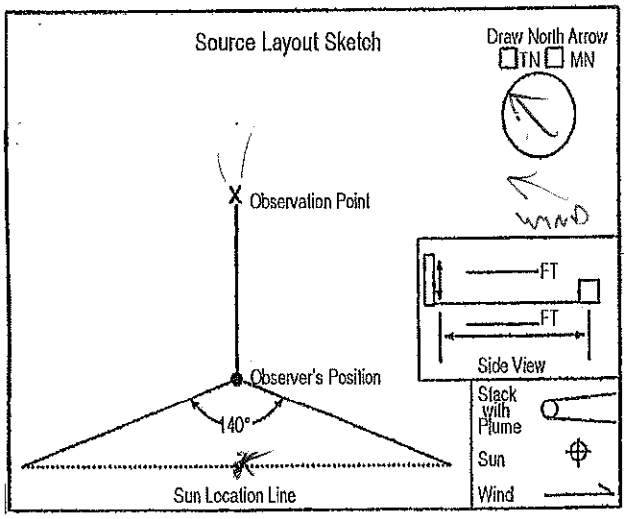
SEC / MIN	0	15	30	45	COMMENTS
1	0	5	10	10	Truck 240
2	5	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	5	5	25	15	Truck 239
7	5	0	0	0	
8	0	0	0	0	
9	0	0	0	5	
10	5	20	15	10	Komatsu
11	5	0	0	0	
12	0	0	5	15	Truck 208
13	10	5	0	0	
14					
15					
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	175
NUMBER OF READINGS:	52
AVERAGE OPACITY (SUM ÷ NUMBER):	3.3 %
OBSERVER'S NAME (PRINT) Jaye Vauthier	
OBSERVER'S SIGNATURE Jaye Vauthier	DATE 9-26-16
ORGANIZATION Peabody Energy	
CERTIFIED BY Carl Koontz	DATE 5-2-16

CIRCUIT #: 2

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT ~60'		
HEIGHT RELATIVE TO OBSERVER ~40'		
DISTANCE OF EMISSION POINT ~300'		
DIRECTION TO EMISSION POINT NE		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR LIGHT BLUE		
AMBIENT TEMPERATURE 80°F		
WIND SPEED 6 MPH		
WIND DIRECTION NW		
SKY CONDITIONS MOSTLY CLEAR		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
8/16/16	12:34pm	12:49pm

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	0	TRUCK #?
2	20	10	5	15	↓
3	10	5	5	5	TRUCK #215
4	5	5	10	5	↓
5	5	5	0	0	↓
6	0	0	0	0	
7	0	0	0	0	TRUCK #289
8	0	0	0	15	↓
9	10	15	10	5	↓
10	5	0	0	5	TRUCK #?
11	10	10	5	0	TRUCK SAT WITH DUMP BOD UP FOR A LONG TIME
12	0	0	0	0	
13	0	0	0	0	
14	0	0	0	0	↓
15					
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	200
NUMBER OF READINGS:	56
AVERAGE OPACITY (SUM ÷ NUMBER):	3.57 %

OBSERVER'S NAME (PRINT): CHRIS BLAKE

OBSERVER'S SIGNATURE: [signature] DATE: 8/16/16

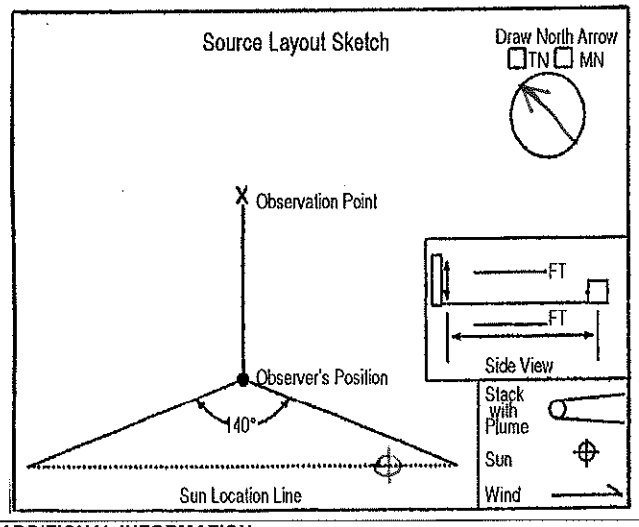
ORGANIZATION: PEABODY

CERTIFIED BY: KOUNTZ ASSOCIATES DATE: 5/2/16

CIRCUIT #: 3

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 50'		
HEIGHT RELATIVE TO OBSERVER 50'		
DISTANCE OF EMISSION POINT 65'		
DIRECTION TO EMISSION POINT NE		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue		
AMBIENT TEMPERATURE 63°F		
WIND SPEED 18 mpH		
WIND DIRECTION NW		
SKY CONDITIONS Clear		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
9-26-16	11:36	11:46

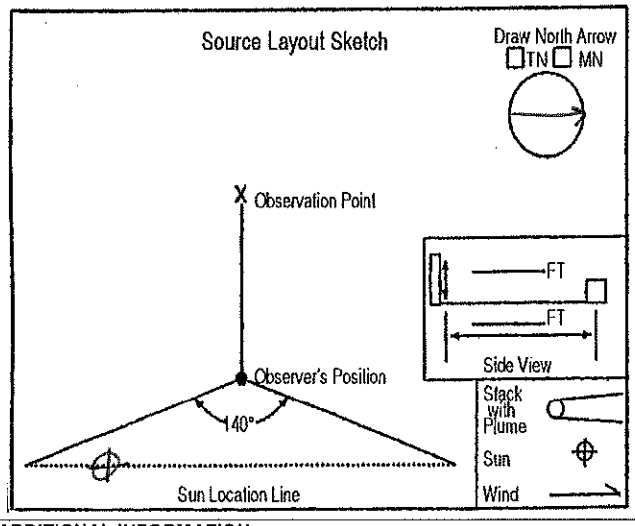
SEC / MIN	0	15	30	45	COMMENTS
1	0	5	35	25	Truck 287
2	15	10	5	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	5	15	Truck 209
6	25	10	5	5	
7	5	0	0	0	
8	0	0	0	15	Truck 210
9	20	10	5	5	
10	5	5	5	5	
11	0	0	0	0	
12					
13					
14					
15					
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	235
NUMBER OF READINGS:	44
AVERAGE OPACITY (SUM ÷ NUMBER):	5.34 %
OBSERVER'S NAME (PRINT) Jaye Vauthier	
OBSERVER'S SIGNATURE Jaye Vauthier	DATE 9-26-16
ORGANIZATION Peabody Energy	
CERTIFIED BY Carl Koontz	DATE 5-2-16

CIRCUIT #: 4

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 100'		
HEIGHT RELATIVE TO OBSERVER 100'		
DISTANCE OF EMISSION POINT 300'		
DIRECTION TO EMISSION POINT West		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue		
AMBIENT TEMPERATURE 67°F		
WIND SPEED 5.0 mph		
WIND DIRECTION South		
SKY CONDITIONS Clear		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
9-28-16	10:12	10:26

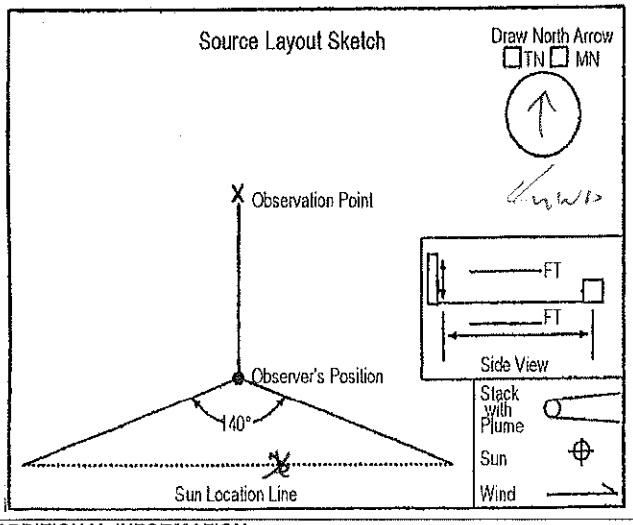
SEC / MIN	0	15	30	45	COMMENTS
1	0	5	10	10	Truck 210
2	10	5	5	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	5	10	Truck 833
6	15	5	0	0	
7	0	0	0	5	Truck 214
8	10	10	10	5	
9	5	5	0	0	
10	0	0	0	0	
11	0	0	0	0	
12	0	0	0	0	
13	0	0	0	0	Truck 212
14	5	15	10	10	
15	10	5	5	0	
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	180
NUMBER OF READINGS:	60
AVERAGE OPACITY (SUM ÷ NUMBER):	3 %
OBSERVER'S NAME (PRINT) Jaye Vauthier	
OBSERVER'S SIGNATURE Jaye Vauthier	DATE 9-28-16
ORGANIZATION Peabody Energy	
CERTIFIED BY Carl Koontz	DATE 5-2-16

CIRCUIT #: 5

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY SCHOOL CREEK MINING		
LOCATION SCHOOL CREEK MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT ~75'		
HEIGHT RELATIVE TO OBSERVER ~70		
DISTANCE OF EMISSION POINT ~150'		
DIRECTION TO EMISSION POINT N		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR LIGHT BLUE/WHITE		
AMBIENT TEMPERATURE 85°F		
WIND SPEED 7MPH		
WIND DIRECTION SW		
SKY CONDITIONS MOSTLY CLEAR		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
7/21/16	10:03am	10:26am

SEC / MIN	0	15	30	45	COMMENTS
1	0	0	0	5	TRUCK?
2	20	10	10	10	
3	5	5	5	5	
4	5	5	0	0	
5	0	0	0	0	
6	0	0	0	15	TRUCK?
7	20	15	10	5	
8	5	0	0	0	TRUCK
9	0	0	0	0	SAT THERE A LONG TIME
10	0	0	0	0	WAITING FOR THE RUBBER TIRS TO CLEAN
11	0	0	0	0	
12	0	0	0	0	MSHA
13	0	0	0	0	
14	0	0	0	0	
15	0	0	0	0	
16	0	0	0	0	
17	0	0	0	0	
18	0	0	0	0	
19	0	0	0	0	
20	0	0	0	0	TRUCK 217 — CONTINUED ON NEXT PAGE

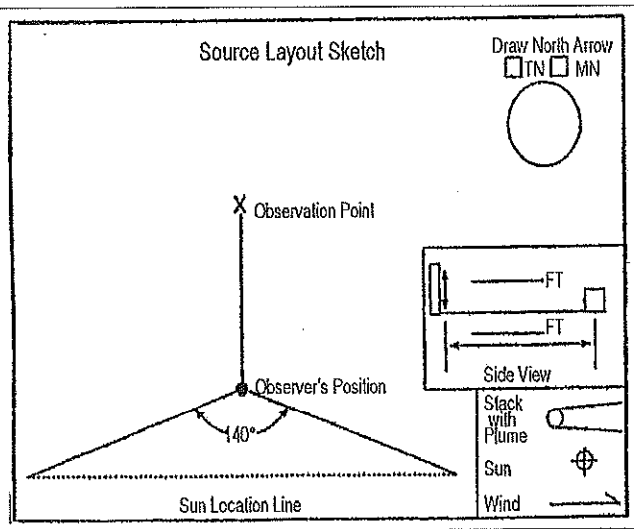
SUM OF OPACITY READINGS:	220
NUMBER OF READINGS:	92
AVERAGE OPACITY (SUM ÷ NUMBER):	2.39 %
OBSERVER'S NAME (PRINT) CHRIS BLAKE	
OBSERVER'S SIGNATURE	DATE 7/21/16
ORGANIZATION FOXBOAT	
CERTIFIED BY KOONTZ ASSOCIATES	DATE 8/2/16

Continued

CIRCUIT #: 5

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT		
HEIGHT RELATIVE TO OBSERVER		
DISTANCE OF EMISSION POINT		
DIRECTION TO EMISSION POINT		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR		
AMBIENT TEMPERATURE		
WIND SPEED		
WIND DIRECTION		
SKY CONDITIONS		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
7/21/16	10:03AM	10:20AM

SEC / MIN	0	15	30	45	COMMENTS
1	5	5	15	15	TRUCK #207 CONTINUED
2	10	10	5	5	
3	0	0	0	0	
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

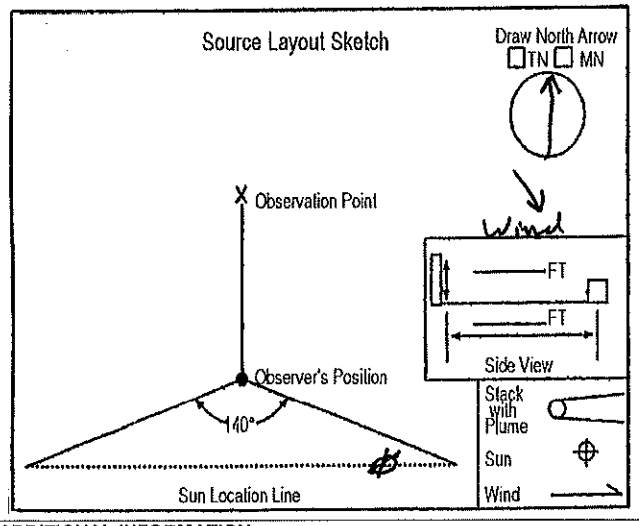
SUM OF OPACITY READINGS:	
NUMBER OF READINGS:	
AVERAGE OPACITY (SUM ÷ NUMBER):	%
OBSERVER'S NAME (PRINT)	
OBSERVER'S SIGNATURE / DATE	
ORGANIZATION	
CERTIFIED BY / DATE	

3 4th Quarter

CIRCUIT #: 1

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 45		
HEIGHT RELATIVE TO OBSERVER 45		
DISTANCE OF EMISSION POINT 60		
DIRECTION TO EMISSION POINT North		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue		
AMBIENT TEMPERATURE 8.1°F		
WIND SPEED 10.4 mph		
WIND DIRECTION WNW		
SKY CONDITIONS Clear		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
12-6-16	10:59	11:09

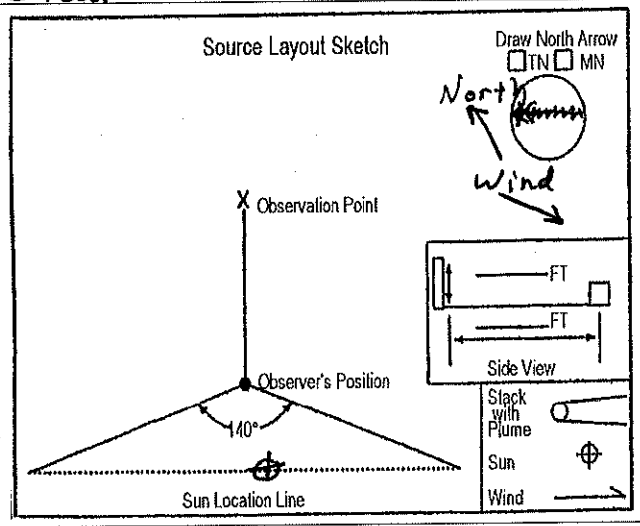
SEC / MIN	0	15	30	45	COMMENTS
1	0	10	20	25	Truck 222
2	10	5	5	0	
3	0	0	0	0	
4	0	0	0	0	
5	5	25	20	10	Truck 232
6	5	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	5	10	10	Truck 217
10	5	0			
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	185
NUMBER OF READINGS:	40
AVERAGE OPACITY (SUM ÷ NUMBER):	4.63 %
OBSERVER'S NAME (PRINT) Jaye Vauphier	
OBSERVER'S SIGNATURE Jaye Vauphier	DATE 12-6-16
ORGANIZATION Peabody - NARM	
CERTIFIED BY Carl Koontz & Assoc.	DATE 10-31-16

CIRCUIT #: 2

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 60		
HEIGHT RELATIVE TO OBSERVER 120		
DISTANCE OF EMISSION POINT 150		
DIRECTION TO EMISSION POINT NE		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue		
AMBIENT TEMPERATURE 9.8°F		
WIND SPEED 9.6 mph		
WIND DIRECTION NNW		
SKY CONDITIONS Clear		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
12-6-16	12:56	13:06

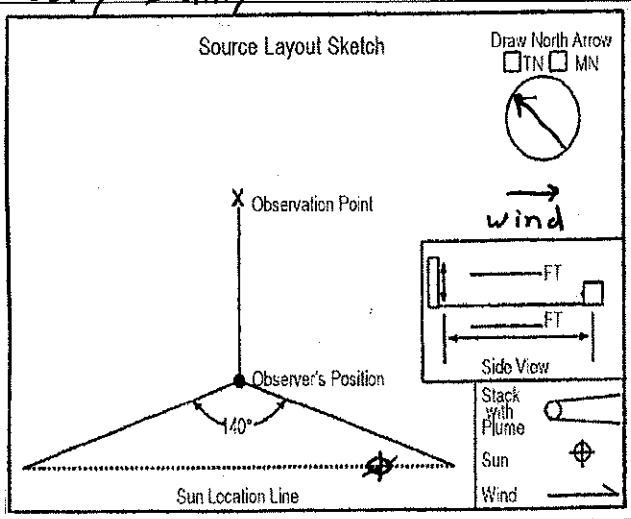
SEC / MIN	0	15	30	45	COMMENTS
1	0	5	35	15	Truck 290
2	5	5	0	0	
3	0	0	5	10	Truck 208
4	10	0	0	0	
5	0	0	10	20	Truck 838
6	5	5	5	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	5	20	10	Truck 207
10	5	5	5	0	
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	185
NUMBER OF READINGS:	40
AVERAGE OPACITY (SUM ÷ NUMBER):	4.63 %
OBSERVER'S NAME (PRINT) Jaye Vauthier	
OBSERVER'S SIGNATURE Jaye Vauthier	DATE 12-6-16
ORGANIZATION Peabody-NARM	
CERTIFIED BY Carl Koontz & Assoc.	DATE 10-31-16

CIRCUIT #: 3

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	**STATE** WY	**ZIP** 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 50'		
HEIGHT RELATIVE TO OBSERVER 50'		
DISTANCE OF EMISSION POINT 60'		
DIRECTION TO EMISSION POINT NE		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue		
AMBIENT TEMPERATURE 31.1°F		
WIND SPEED 20.0 mph		
WIND DIRECTION NW (322)		
SKY CONDITIONS Mostly Sunny		



ADDITIONAL INFORMATION		

DATE	**START TIME**	**END TIME**
12-27-16	11:05	11:15

SEC / MIN	0	15	30	45	COMMENTS
1	0	10	40	5	Truck 210
2	5	0	0	0	
3	0	0	0	0	
4	0	0	15	15	Truck 207
5	10	10	10	5	
6	5	5	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	5	Truck 214
10	40	15	5	0	
11	0				
12					
13					
14					
15					
16					
17					
18					
19					
20					

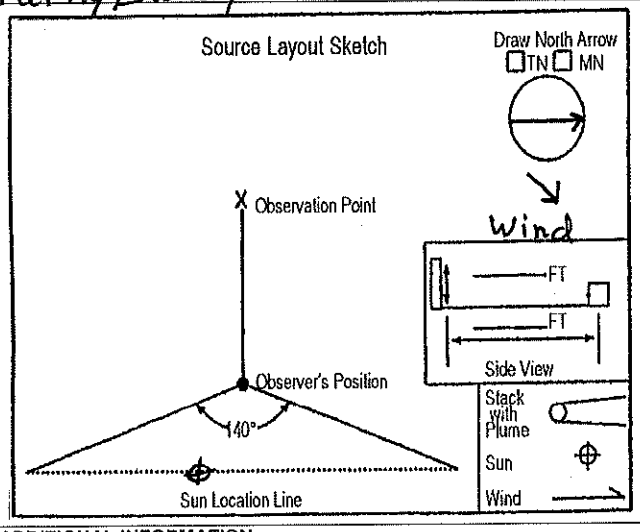
SUM OF OPACITY READINGS:	200
NUMBER OF READINGS:	41
AVERAGE OPACITY (SUM ÷ NUMBER):	4.87 %
OBSERVER'S NAME (PRINT) Jaye Vauthier	
OBSERVER'S SIGNATURE Jaye Vauthier — **DATE** 12-21-16	
ORGANIZATION Peabody-NARM	
CERTIFIED BY Carl Koontz + Assoc. — **DATE** 10-31-16	

CIRCUIT #: 4

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY POWDER RIVER MINING		
LOCATION NORTH ANTELOPE ROCHELLE MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	STATE WY	ZIP 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 60		
HEIGHT RELATIVE TO OBSERVER 60		
DISTANCE OF EMISSION POINT 300		
DIRECTION TO EMISSION POINT West		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue/white		
AMBIENT TEMPERATURE 35.6 °F		
WIND SPEED 31.7 mph		
WIND DIRECTION WSW (249°)		
SKY CONDITIONS Partly Cloudy		

Source Layout Sketch



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
12-20-16	9:59	10:09

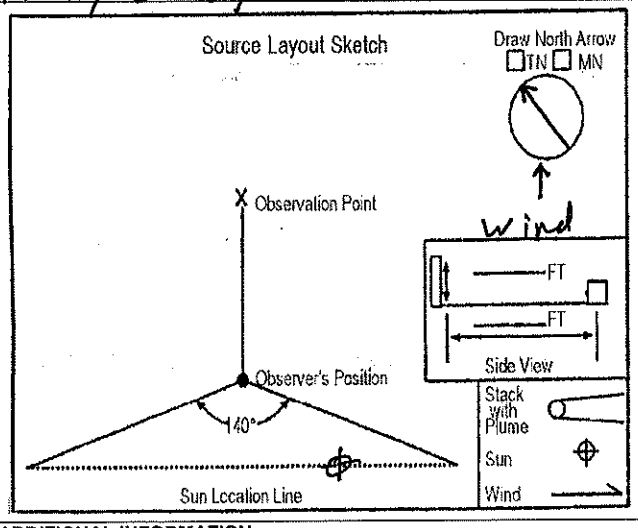
SEC / MIN	0	15	30	45	COMMENTS
1	0	15	10	10	Truck 210
2	5	5	5	0	
3	0	0	0	5	Truck 211
4	15	10	5	5	
5	5	5	5	5	
6	5	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	10	Truck 209
10	10	5	0		
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

SUM OF OPACITY READINGS:	140
NUMBER OF READINGS:	39
AVERAGE OPACITY (SUM ÷ NUMBER):	3.59 %
OBSERVER'S NAME (PRINT) Jaye Vauthier	
OBSERVER'S SIGNATURE Jaye Vauthier	DATE 12-20-16
ORGANIZATION Peabody - NARM	
CERTIFIED BY Carl Koontz	DATE 10-31-16

CIRCUIT #: 5

EPA METHOD 9 (40 CFR 60 – APPENDIX A)
VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME PEABODY SCHOOL CREEK MINING		
LOCATION SCHOOL CREEK MINE		
ADDRESS 339 ANTELOPE ROAD		
CITY WRIGHT	**STATE** WY	**ZIP** 82730
PROCESS EQUIPMENT TRUCK DUMP		
CONTROL EQUIPMENT STILLING SHED		
DESCRIBE EMISSION POINT STILLING SHED DOOR		
HEIGHT OF EMISSION POINT 50		
HEIGHT RELATIVE TO OBSERVER 100		
DISTANCE OF EMISSION POINT 125		
DIRECTION TO EMISSION POINT NE		
DESCRIBE EMISSIONS COAL DUST		
EMISSION COLOR BLACK		
DESCRIBE PLUME BACKGROUND SKY		
BACKGROUND COLOR Blue/White		
AMBIENT TEMPERATURE 36.9°F		
WIND SPEED 26.6 mpH		
WIND DIRECTION SW (233°)		
SKY CONDITIONS Partly Cloudy		



ADDITIONAL INFORMATION

DATE	START TIME	END TIME
12-19-16	11:21	11:28

SEC / MIN	0	15	30	45	COMMENTS
1	0	10	35	15	Truck (285)
2	5	0	0	0	
3	0	0	0	5	Truck (275)
4	15	30	20	10	
5	10	0	0	0	Truck (Cat)
6	10	30	10	5	
7	0				
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

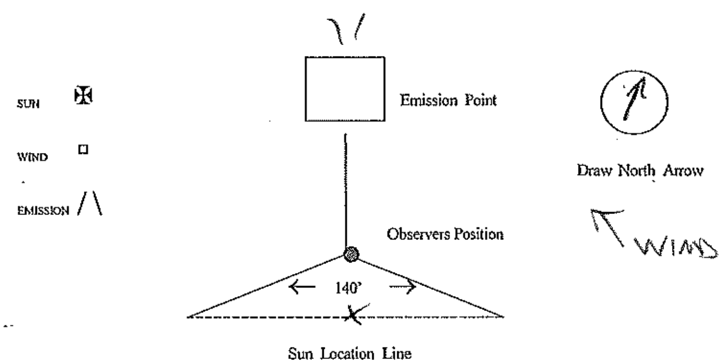
SUM OF OPACITY READINGS:	210
NUMBER OF READINGS:	25
AVERAGE OPACITY (SUM ÷ NUMBER):	8.4 %
OBSERVER'S NAME (PRINT) Jaye Vanthier	
OBSERVER'S SIGNATURE Jaye Vanthier	DATE 12-19-16
ORGANIZATION Peabody - NARM	
CERTIFIED BY Carl Koontz & Assoc.	DATE 10-31-16

3RD QUARTER
2016

METHOD 22- FUGITIVE EMISSION INSPECTION FORM OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 2 TRANSFER HOUSE**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **ATOMIZER 32028**
HEIGHT ABOVE GROUND: 10' HEIGHT RELATIVE TO OBSERVER: 6'
DISTANCE TO OBSERVER: 15' DIRECTION FROM OBSERVER: NNW
OBSERVATION DATE: 8/16/16 TIME: 1:04pm
EMISSION COLOR: Black/NA
BACKGROUND COLOR: Light Blue + Rocks
SKY CONDITIONS: Mostly Cloudy
PRECIPITATION: 0
WIND SPEED: 6mph
WIND DIRECTION: NW
AMBIENT TEMP.: 81°F
READERS SIGNATURE: [signature] **CERTIFIED BY:** Kuntz Associates **DATE:** 5/2/16



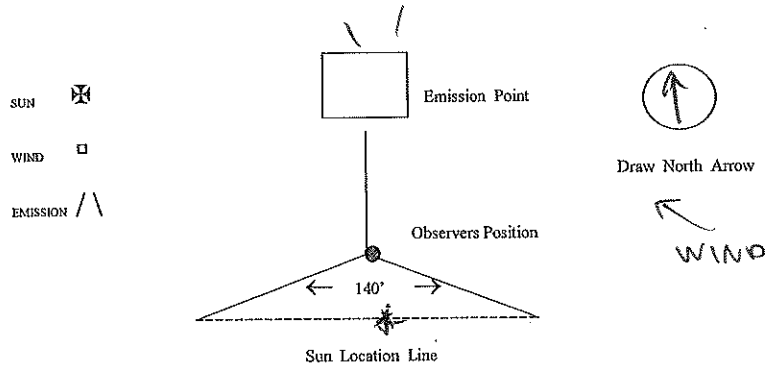
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	1:04pm	1:05pm	1min	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 2 AT TRUCK DUMP**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **#880 ATOMIZER 32012**
HEIGHT ABOVE GROUND: 10' HEIGHT RELATIVE TO OBSERVER: 5'
DISTANCE TO OBSERVER: 10' DIRECTION FROM OBSERVER: NNW
OBSERVATION DATE: 8/16/16 TIME: 12:25 AM
EMISSION COLOR: BLACK/GRAY
BACKGROUND COLOR: TAN & WHITE
SKY CONDITIONS: MOSTLY CLOUDY
PRECIPITATION: 0
WIND SPEED: 6 mph
WIND DIRECTION: WNW
AMBIENT TEMP.: 79°F
READERS SIGNATURE: [signature] **CERTIFIED BY:** KUNTZ 4556614705 **DATE:** 8/2/16



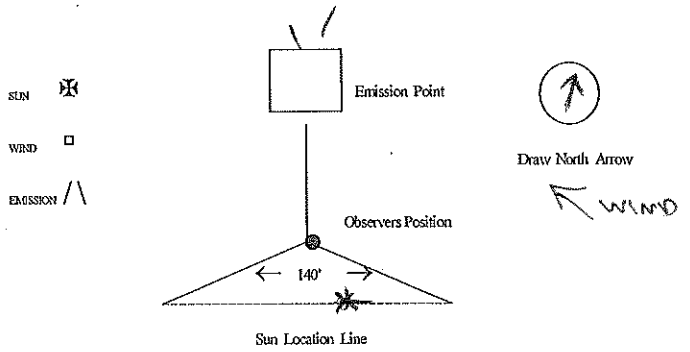
- ADDITIONAL INFORMATION _____
- _____

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	12:25 AM	12:26 AM	1 min	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **TOP of SILOS 4 & 5**
PROCESS: **COAL HANDLING**
CONTROL EQUIPMENT: **# 34395 and 34396**
HEIGHT ABOVE GROUND: 200 HEIGHT RELATIVE TO OBSERVER: 195'
DISTANCE TO OBSERVER: 300' DIRECTION FROM OBSERVER: NNE
OBSERVATION DATE: 8/16/16 TIME: 11:56 AM
EMISSION COLOR: SMOKE/NA
BACKGROUND COLOR: LIGHT BLUE
SKY CONDITIONS: MOSTLY CLEAR
PRECIPITATION: Ø
WIND SPEED: 6 mph
WIND DIRECTION: WNW
AMBIENT TEMP.: 79 °F
READERS SIGNATURE: [signature] **CERTIFIED BY:** KOSTER ASSOCIATES **DATE:** 5/2/16



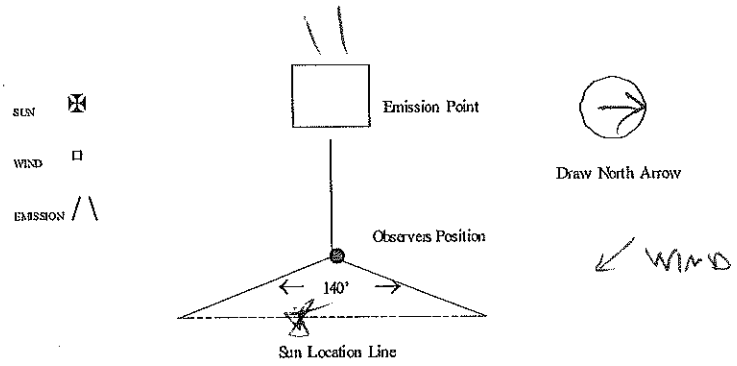
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	11:56 AM	11:57 AM	1 min	Ø

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **D-A-B WEST TRANSFER ATOMIZER**
CONTROL EQUIPMENT: **34391 Atomizers**
HEIGHT ABOVE GROUND: 15' HEIGHT RELATIVE TO OBSERVER: 10'
DISTANCE TO OBSERVER: 45' DIRECTION FROM OBSERVER: W
OBSERVATION DATE: 7/21/16 TIME: 9:03am
EMISSION COLOR: BLACK/WA
BACKGROUND COLOR: SKY
SKY CONDITIONS: MOSTLY CLEAR
PRECIPITATION: 0
WIND SPEED: 8 mph
WIND DIRECTION: SE
AMBIENT TEMP.: 81°F
READERS SIGNATURE: [signature] **CERTIFIED BY:** Kurtz Assurance **DATE:** 5/2/16



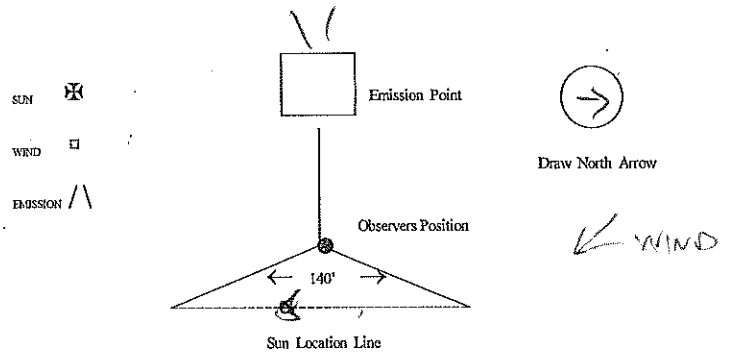
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	9:03am	9:04am	1min	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **TOP of SILOS 1, 2, and 3**
PROCESS: **COAL HANDLING**
CONTROL EQUIPMENT: **ATOMIZER 34392, 34393, 34394**
HEIGHT ABOVE GROUND: ~200' HEIGHT RELATIVE TO OBSERVER: ~195'
DISTANCE TO OBSERVER: ~700' DIRECTION FROM OBSERVER: W
OBSERVATION DATE: 5/2/16 TIME: 8:59am
EMISSION COLOR: BLACK/GRAY
BACKGROUND COLOR: BLUE
SKY CONDITIONS: MOSTLY CLEAR
PRECIPITATION: 0
WIND SPEED: 8 mph
WIND DIRECTION: SE
AMBIENT TEMP.: 61°F
READERS SIGNATURE: [signature] CERTIFIED BY: KUNTZ ASSOCIATES DATE: 5/2/16



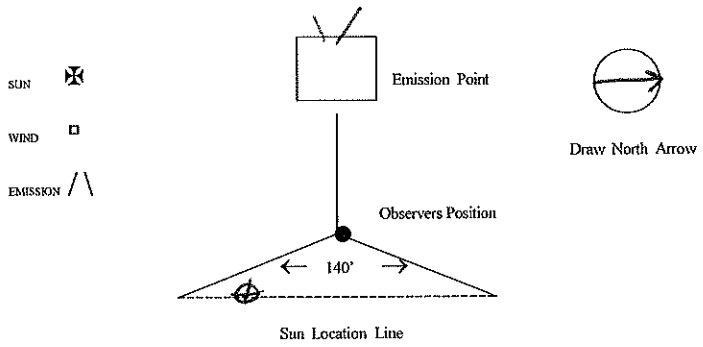
- ADDITIONAL INFORMATION

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	8:59am	9:00AM	1MIN	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 4 AT TRUCK DUMP**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **ATOMIZER 33595**
HEIGHT ABOVE GROUND: 8' HEIGHT RELATIVE TO OBSERVER: 2'
DISTANCE TO OBSERVER: 25' DIRECTION FROM OBSERVER: W
OBSERVATION DATE: 9-26-16 TIME: 11:05
EMISSION COLOR: Black
BACKGROUND COLOR: White
SKY CONDITIONS: ~~P. Cloudy~~ Clear
PRECIPITATION: None
WIND SPEED: 18
WIND DIRECTION: NW
AMBIENT TEMP.: 63
READERS SIGNATURE: ~~Jaye Vanthis~~ **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



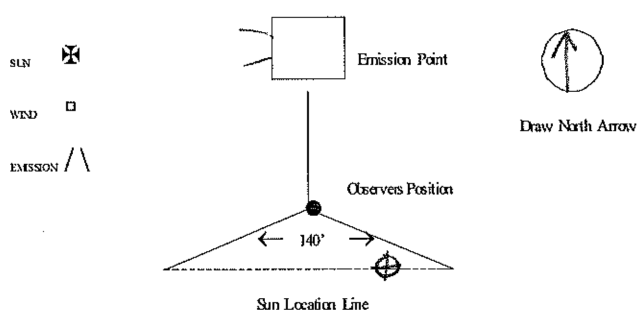
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1:00 min	00:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **D-A-B EAST TRANSFER ATOMIZER**
CONTROL EQUIPMENT: **34390 ATOMIZERS**
HEIGHT ABOVE GROUND: 6' HEIGHT RELATIVE TO OBSERVER: 2'
DISTANCE TO OBSERVER: 15' DIRECTION FROM OBSERVER: North
OBSERVATION DATE: 9-26-16 TIME: 10:35
EMISSION COLOR: Black
BACKGROUND COLOR: Grey
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 18
WIND DIRECTION: NW
AMBIENT TEMP.: 63
READERS SIGNATURE: [signature] **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



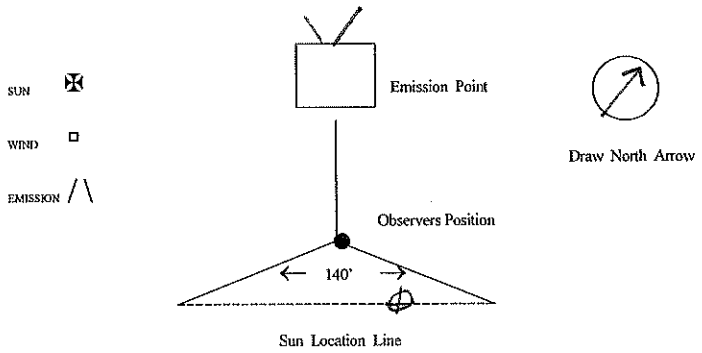
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1:00 min	00:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 1**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **# 881 ATOMIZER 34777**
HEIGHT ABOVE GROUND: 8' HEIGHT RELATIVE TO OBSERVER: 4'
DISTANCE TO OBSERVER: 20' DIRECTION FROM OBSERVER: NW
OBSERVATION DATE: 9-26-16 TIME: 8:40
EMISSION COLOR: Black
BACKGROUND COLOR: Tan
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 3
WIND DIRECTION: NW
AMBIENT TEMP.: 57
READERS SIGNATURE: Sonya Vautrin **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



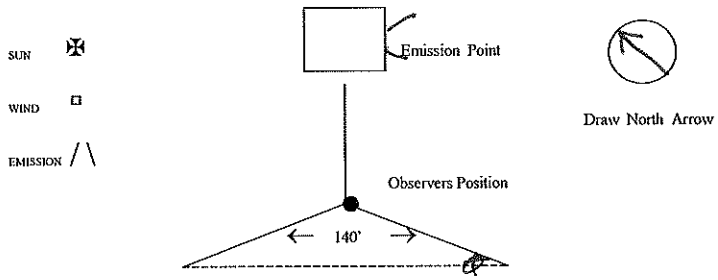
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1:00 min	00:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 3 - 4 TRANSFER**
CONTROL EQUIPMENT: **#33549**
HEIGHT ABOVE GROUND: 25 HEIGHT RELATIVE TO OBSERVER: 25
DISTANCE TO OBSERVER: 30 DIRECTION FROM OBSERVER: NE
OBSERVATION DATE: 9-26-16 TIME: 11:55
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 18
WIND DIRECTION: NW
AMBIENT TEMP.: 65
READERS SIGNATURE: Faye Vanthuer **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



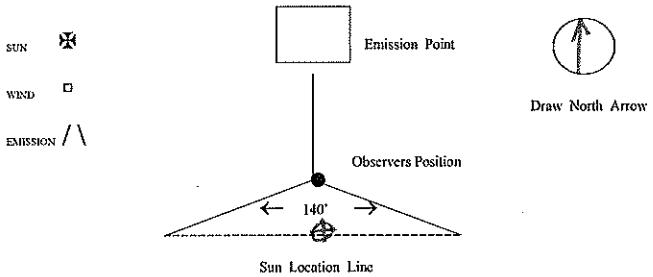
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1:00 min	00:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 3**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **#ATOMIZER 33661**
HEIGHT ABOVE GROUND: 8 HEIGHT RELATIVE TO OBSERVER: 3
DISTANCE TO OBSERVER: 15 DIRECTION FROM OBSERVER: N
OBSERVATION DATE: 9-26-16 TIME: 11:58
EMISSION COLOR: Black
BACKGROUND COLOR: White
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 18
WIND DIRECTION: NW
AMBIENT TEMP.: 65
READERS SIGNATURE: [signature] **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



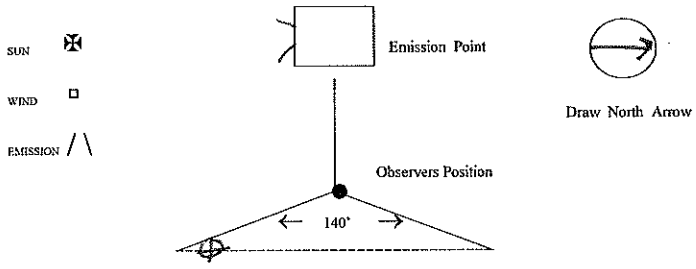
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1:00 min	0:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 4 IN PIT**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **#33536 Atomizer**
HEIGHT ABOVE GROUND: 10 HEIGHT RELATIVE TO OBSERVER: B
DISTANCE TO OBSERVER: 30 DIRECTION FROM OBSERVER: W
OBSERVATION DATE: 9-26-16 TIME: 11:15
EMISSION COLOR: Black
BACKGROUND COLOR: Tan
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 18
WIND DIRECTION: NW
AMBIENT TEMP.: 65
READERS SIGNATURE: [signature] **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



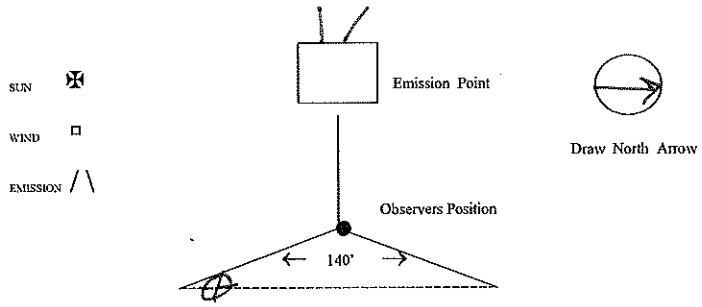
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1 min	0:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 4 530 HEAD CHUTE**
PROCESS: **COAL TRANSFER**
CONTROL EQUIPMENT: **# 33590**
HEIGHT ABOVE GROUND: 80 HEIGHT RELATIVE TO OBSERVER: 80
DISTANCE TO OBSERVER: 150 DIRECTION FROM OBSERVER: West
OBSERVATION DATE: 9-26-16 TIME: 11:20
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 18
WIND DIRECTION: NW
AMBIENT TEMP.: 65
READERS SIGNATURE: Jaye Voutkier **CERTIFIED BY:** Carl Koontz **DATE:** 5-2-16



- ADDITIONAL INFORMATION
-

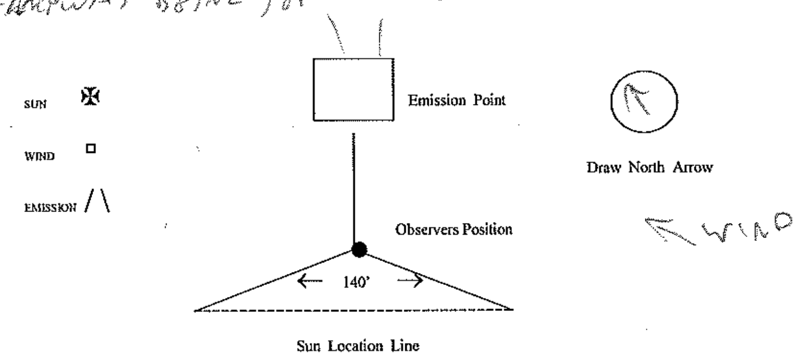
OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	0:00	1:00	1 min	0:00

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 2 SLOT STORAGE**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **# 884 ATOMIZER 32105**
HEIGHT ABOVE GROUND: 30' HEIGHT RELATIVE TO OBSERVER: 60'
DISTANCE TO OBSERVER: 75' DIRECTION FROM OBSERVER: NNE
OBSERVATION DATE: 9/26/16 TIME: 2:05pm
EMISSION COLOR: Black/NA
BACKGROUND COLOR: TAN + BLUE
SKY CONDITIONS: CLEAR
PRECIPITATION: NA
WIND SPEED: 17mph
WIND DIRECTION: NW
AMBIENT TEMP.: ~66°F
READERS SIGNATURE: [signature] **CERTIFIED BY:** KUNTZ ASSOCIATES **DATE:** 5/2/16

ALSO OBSERVED BY JAYS — 9/28 9/29 + 9/30
*- MAINTENANCE WAS BEING PERFORMED EACH DAY THAT WEEK



- ADDITIONAL INFORMATION NNE ANNUAL - MAINTENANCE
- BEING PERFORMED

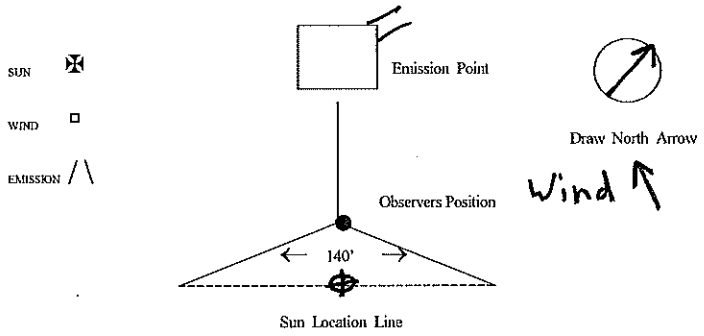
OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	2:05pm	2:06pm	1 min	Ø

4th Quarter

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 1**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **# 881 ATOMIZER 34777**
HEIGHT ABOVE GROUND: 15' HEIGHT RELATIVE TO OBSERVER: 15'
DISTANCE TO OBSERVER: 25' DIRECTION FROM OBSERVER: NW
OBSERVATION DATE: 12-6-16 TIME: 9:29
EMISSION COLOR: Black
BACKGROUND COLOR: Tan
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 6.1 mpH
WIND DIRECTION: WNW
AMBIENT TEMP.: 5.7°F
READERS SIGNATURE: Ty Voth **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



- ADDITIONAL INFORMATION

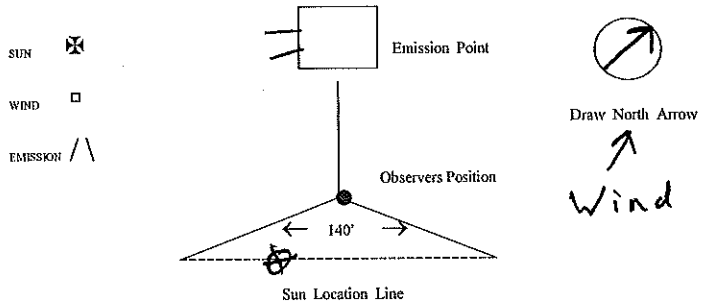
OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	9:29	9:30	1:00	0

4th Quarter

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 2 SLOT STORAGE**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **# 884 ATOMIZER 32105**
HEIGHT ABOVE GROUND: 30' HEIGHT RELATIVE TO OBSERVER: 40'
DISTANCE TO OBSERVER: 60' DIRECTION FROM OBSERVER: NW
OBSERVATION DATE: 12-6-16 TIME: 13:13
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 9.6 mpH
WIND DIRECTION: NNW
AMBIENT TEMP.: 9.8°F
READERS SIGNATURE: [signature] CERTIFIED BY: Carl Coontz DATE: 10-31-16



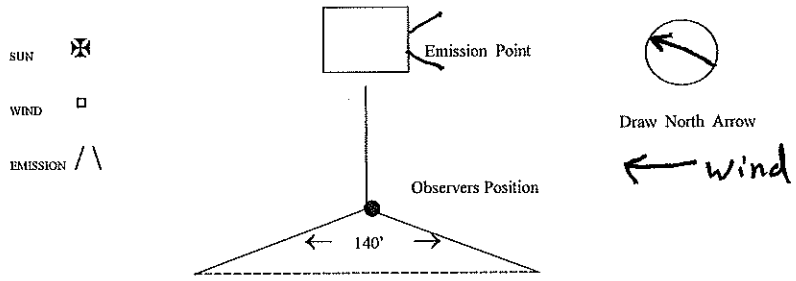
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	13:13	13:14	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 2 AT TRUCK DUMP**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **#880 ATOMIZER 32012**
HEIGHT ABOVE GROUND: 6' HEIGHT RELATIVE TO OBSERVER: 0
DISTANCE TO OBSERVER: 40' DIRECTION FROM OBSERVER: NE
OBSERVATION DATE: 12-6-16 TIME: 17:47
EMISSION COLOR: Black
BACKGROUND COLOR: Light Grey
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 9.6
WIND DIRECTION: NNW
AMBIENT TEMP.: 9.8°F
READERS SIGNATURE: [signature] CERTIFIED BY: Carl Koontz DATE: 10-31-16



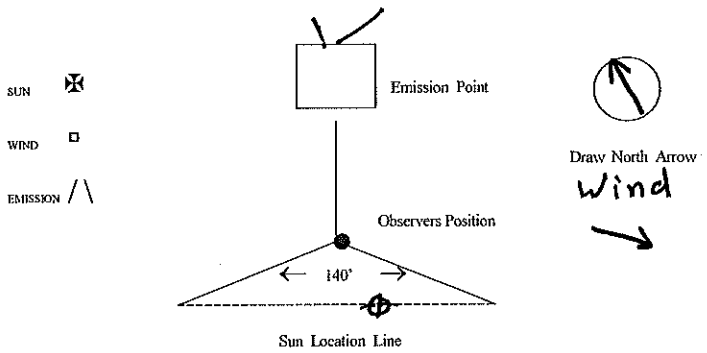
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	12:47	12:48	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 2 TRANSFER HOUSE**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **ATOMIZER 32028**
HEIGHT ABOVE GROUND: 5' HEIGHT RELATIVE TO OBSERVER: 0
DISTANCE TO OBSERVER: 30' DIRECTION FROM OBSERVER: NE
OBSERVATION DATE: 12-6-16 TIME: 8:44
EMISSION COLOR: Black
BACKGROUND COLOR: White
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 3.4 mph
WIND DIRECTION: NW
AMBIENT TEMP.: 170F
READERS SIGNATURE: [signature] **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



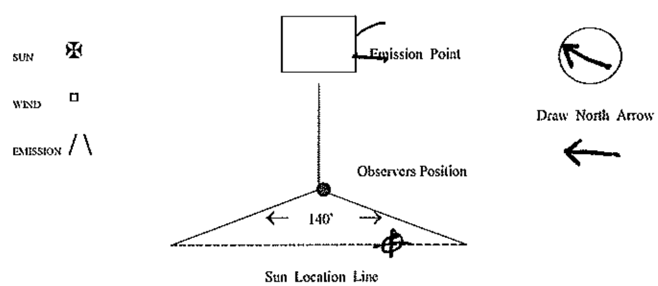
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	8:44	8:45	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 3**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **#ATOMIZER 33661**
HEIGHT ABOVE GROUND: 6' HEIGHT RELATIVE TO OBSERVER: 1'
DISTANCE TO OBSERVER: 15' DIRECTION FROM OBSERVER: NE
OBSERVATION DATE: 12-6-16 TIME: 13:33
EMISSION COLOR: Black
BACKGROUND COLOR: Light Grey
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 11.2
WIND DIRECTION: NNW
AMBIENT TEMP.: 10.4oF
READERS SIGNATURE: [signature] CERTIFIED BY: Carl Koontz DATE: 10-31-16



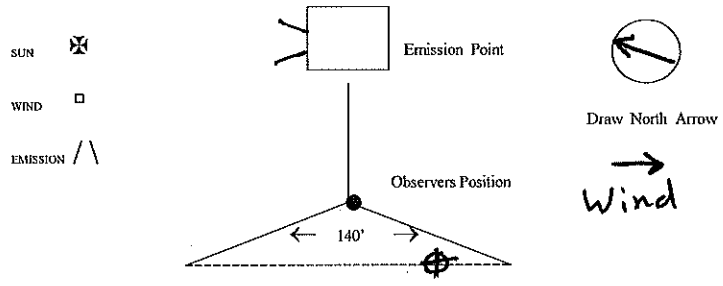
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	13:33	13:34	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 3 - 4 TRANSFER**
CONTROL EQUIPMENT: **#33549**
HEIGHT ABOVE GROUND: 30' HEIGHT RELATIVE TO OBSERVER: 30'
DISTANCE TO OBSERVER: 150' DIRECTION FROM OBSERVER: East
OBSERVATION DATE: 12-6-16 TIME: 13:29
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 11.2 mpH
WIND DIRECTION: NNW
AMBIENT TEMP.: 10.4°F
READERS SIGNATURE: Jay Vasthi CERTIFIED BY: Carl Koontz DATE: 10-31-16



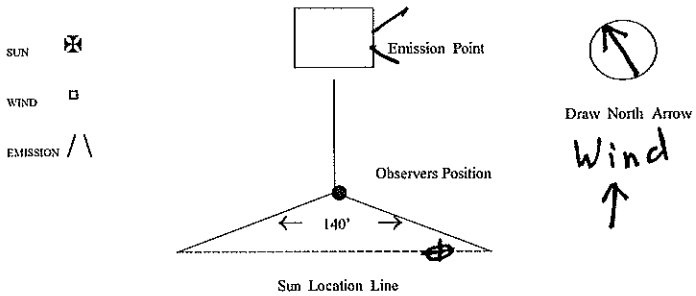
- ADDITIONAL INFORMATION

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	13:29	13:30	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 4 IN PIT**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **#33536 Atomizer**
HEIGHT ABOVE GROUND: 15' HEIGHT RELATIVE TO OBSERVER: 10'
DISTANCE TO OBSERVER: 30' DIRECTION FROM OBSERVER: North
OBSERVATION DATE: 12-20-16 TIME: 9:00
EMISSION COLOR: Black
BACKGROUND COLOR: Blue/White
SKY CONDITIONS: Partly Cloudy
PRECIPITATION: 0.0
WIND SPEED: 31.7 mph
WIND DIRECTION: WSW (249°)
AMBIENT TEMP.: 38.4°F
READERS SIGNATURE: Faye Vanthier **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



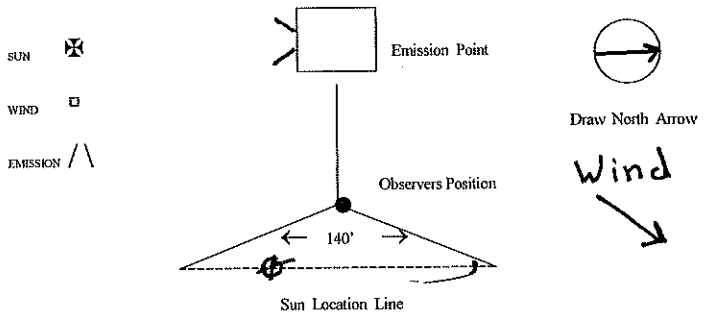
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	10:26	10:27	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 4 AT TRUCK DUMP**
PROCESS: **COAL CRUSHING**
CONTROL EQUIPMENT: **ATOMIZER 33595**
HEIGHT ABOVE GROUND: 6' HEIGHT RELATIVE TO OBSERVER: 0'
DISTANCE TO OBSERVER: 5' DIRECTION FROM OBSERVER: NW
OBSERVATION DATE: 12-20-16 TIME: 10:18
EMISSION COLOR: Black
BACKGROUND COLOR: White
SKY CONDITIONS: Partly Cloudy
PRECIPITATION: 0.0
WIND SPEED: 31.7 mpH
WIND DIRECTION: SW (249°)
AMBIENT TEMP.: 38.4°F
READERS SIGNATURE: Jaya Vanthi **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



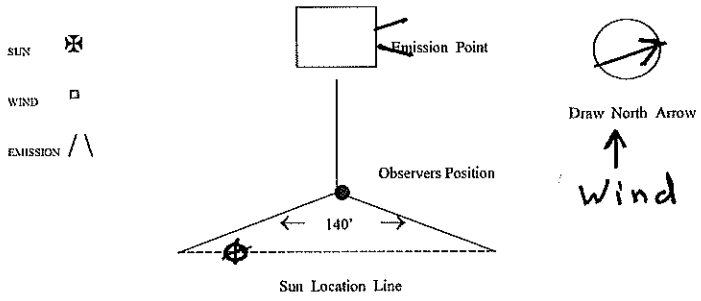
- ADDITIONAL INFORMATION

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	10:18	10:19	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **CIRCUIT 4 530 HEAD CHUTE**
PROCESS: **COAL TRANSFER**
CONTROL EQUIPMENT: **# 33590**
HEIGHT ABOVE GROUND: 50' HEIGHT RELATIVE TO OBSERVER: 50'
DISTANCE TO OBSERVER: 65' DIRECTION FROM OBSERVER: NW
OBSERVATION DATE: 12-6-16 TIME: 9:50
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 6.1 mph
WIND DIRECTION: WNW
AMBIENT TEMP.: 5.70 F
READERS SIGNATURE: Jay Nortis **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



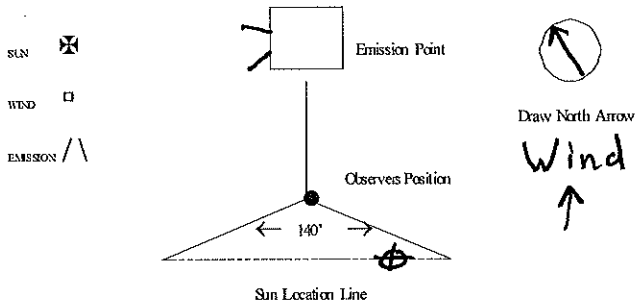
- ADDITIONAL INFORMATION

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	9:50	9:51	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **D-A-B EAST TRANSFER ATOMIZER**
CONTROL EQUIPMENT: **34390 ATOMIZERS**
HEIGHT ABOVE GROUND: 6' HEIGHT RELATIVE TO OBSERVER: 3'
DISTANCE TO OBSERVER: 25' DIRECTION FROM OBSERVER: NEast
OBSERVATION DATE: 10-20-16 TIME: 9:42
EMISSION COLOR: Black
BACKGROUND COLOR: White
SKY CONDITIONS: Partly Cloudy
PRECIPITATION: 0.0
WIND SPEED: 30.6 mph
WIND DIRECTION: WSW (250°)
AMBIENT TEMP.: 33.6 °F
READERS SIGNATURE: [signature] **CERTIFIED BY:** Carl Coontz **DATE:** 10-31-16



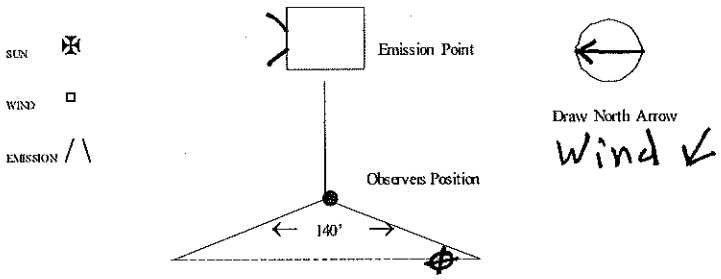
- ADDITIONAL INFORMATION _____
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	9:42	9:43	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **D-A-B WEST TRANSFER ATOMIZER**
CONTROL EQUIPMENT: **34391 Atomizers**
HEIGHT ABOVE GROUND: 10' HEIGHT RELATIVE TO OBSERVER: 5'
DISTANCE TO OBSERVER: 15' DIRECTION FROM OBSERVER: East
OBSERVATION DATE: 12-6-16 TIME: 13:46
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 11.2 mph
WIND DIRECTION: NNW
AMBIENT TEMP.: 10.4°F
READERS SIGNATURE: Faye Vanthien **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



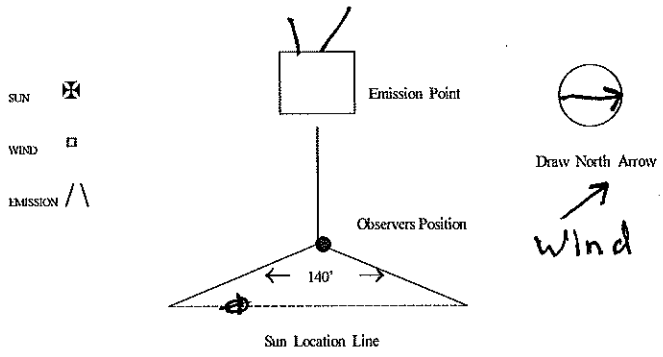
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	13:46	13:47	1:00	0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **TOP of SILOS 1, 2, and 3**
PROCESS: **COAL HANDLING**
CONTROL EQUIPMENT: **ATOMIZER 34392, 34393, 34394**
HEIGHT ABOVE GROUND: 300' HEIGHT RELATIVE TO OBSERVER: 300'
DISTANCE TO OBSERVER: 422' DIRECTION FROM OBSERVER: West
OBSERVATION DATE: 12-6-16 TIME: 9:10
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 3.4 mpH
WIND DIRECTION: NW
AMBIENT TEMP.: 17°F
READERS SIGNATURE: Faye Vanthier **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



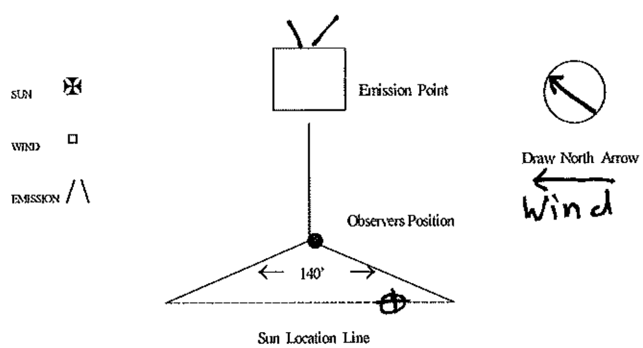
- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	9:10	9:11	1:00	1st 0

METHOD 22- FUGITIVE EMISSION INSPECTION FORM
OUTDOOR LOCATION

PEABODY POWDER RIVER MINING, LLC
NORTH ANTELOPE ROCHELLE MINE
341A ANTELOPE ROAD
WRIGHT, WY 82717
PERMIT NO. MD-6375

EMISSION POINT: **TOP of SILOS 4 & 5**
PROCESS: **COAL HANDLING**
CONTROL EQUIPMENT: **# 34395 and 34396**
HEIGHT ABOVE GROUND: 300' HEIGHT RELATIVE TO OBSERVER: 300'
DISTANCE TO OBSERVER: 500' DIRECTION FROM OBSERVER: North
OBSERVATION DATE: 12-6-16 TIME: 9:00
EMISSION COLOR: Black
BACKGROUND COLOR: Blue
SKY CONDITIONS: Clear
PRECIPITATION: None
WIND SPEED: 3.4
WIND DIRECTION: NW
AMBIENT TEMP.: 1.7°F
READERS SIGNATURE: [illegible] **CERTIFIED BY:** Carl Koontz **DATE:** 10-31-16



- ADDITIONAL INFORMATION
-

OBSERVATION SEGMENT/NUMBER	START TIME	END TIME	OBSERVATION DURATION	TOTAL EMISSION DURATION
1	9:00	9:01	1:00	0

APPENDIX C – AIR QUALITY ACTION PLAN

An automated alarm system will sound an alarm at the Security Office if monitored emissions elevate to a level of concern. When hourly values are found to be above 250 $\mu g/m^3$ but below 500 $\mu g/m^3$ or the 24-hour values are above 75 $\mu g/m^3$ but below 100 $\mu g/m^3$ alarm level, operations personnel will determine possible emission source areas at and surrounding the mine in addition to monitoring hourly reading trends. Certain factors such as the weather forecast and actual wind speed and direction are checked. Preparatory actions are implemented as necessary. The actions may include determining the availability and staffing of water trucks, the nature and location of any contractor activities, or optional digging or haulage plans.

When a one-hour concentration exceeds 500 $\mu g/m^3$ or the 24-hour value exceeds 100 $\mu g/m^3$, the response to these alarms will include, but may not be limited to, inspection of the immediate vicinity of the monitors, focused chemical and water treatment in active mine areas, and if necessary, temporary realignment or suspension of certain mine activities that are determined to contribute to the levels of concern. If the source(s) is not at the North Antelope Rochelle Mine and continues to be a significant contributor of emissions, personnel will document the source(s) and contact AQD, when possible.

03-29-18	NARM Submitted Exceptional Event Demonstration Reverse Trace Map (Titled Exhibit 1)

NA-9
Reno Rd
Mackey Rd
153
HOPPER NOTCH
NORTH NOTCH
NORTH MID PIT
NORTH WEST PIT
PORCUPINE EAST PIT
110
NORTH EAST PIT
PORCUPINE CREEK PIT
Antelope Rd
156
103
OIL WELL WEST PIT
104
ELK PIT
109
108
121
105
OIL WELL EAST PIT
PINE TREE SOUTH PIT
374
MID PIT
111
120
CIRCUIT 4
Piney Canyon Rd.
NARM Access Road
OVERLAND CONVEYOR
WEST MIDDLE PIT
CIRCUIT 3
PRCC-1
CIRCUIT 2
OVERLAND CONVEYOR
RO-1
CIRCUIT 1
WEST PIT
RAILLOOP EAST PIT
112
RAILLOOP WEST PIT
154
375
107
102
373
322.9°
315.6°
NA-8
Antelope Rd
Antelope Rd

11-29-16 Wind Rose
North Antelope Rochelle Mine
Wright, WY
11/29/2016 Hr. 1 to 11/29/2016 Hr. 24
N
W
E
S
0.0 mph
0.0%
mph

Legend

- Coal Shovel
- Dragline
- Overburden Shovel
- Reverse Trace from NA-8 (315.6° to 322.9°)
- Circuit (Truck Dump, Crusher, Conveyor)
- MET Station
- TEOM Location
- North Antelope Rochelle Mine LNCM Boundary
- Major Roads
- Railroad

- Uncontrolled Areas - 823 ac.

Land Status - 2,209/3,031 acres controlled

- Topsoil removed - 143/143 acres controlled
- Benches - 0/243 acres controlled
- To be backfilled - 0/452 acres controlled
- To be graded - 0/128 acres controlled
- Graded (to be topsoiled) - 114/114 acres controlled
- Topsoiled (to be revegetated) - 3/3 acres controlled
- Revegetated (held for release) - 1,230/1,230 acres controlled
- Overburden stockpiles - 61/61 acres controlled
- Topsoil stockpiles - 114/114 acres controlled
- Roads and Road Slopes - 262/262 acres controlled
- Railroads - 29/29 acres controlled
- Facilities - 177/177 acres controlled
- Dams, ditches, ponds - 76/76 acres controlled

Note: Photo of active pit areas is dated 11/25/16.

N

SCALE
0 2000 4000 6000 8000'

Revision	Date

Peabody

NORTH ANTELOPE ROCHELLE MINE
Caller Box 3034 Gillette, WY 82717

NOVEMBER 29, 2016 EXCEPTIONAL EVENT
EXHIBIT 1

EQUIPMENT LOCATIONS AND LAND STATUS

Permit No. MD-16282

Designed By: ACH/PCD	Scale: 1 " = 2000 '
Drawn By: ACH	C.I.: N/A
Checked By: PCD	Sheet: 1 of 1
Date Drawn: 2/28/18	File: n_aqd_ee_ro1_ex01_161129.mxd

03-30-18 AQD Sent Email Acknowledging Receipt of Exceptional Event Package

From:	Blake, Chris
To:	Dinsmoor, Phil
Cc:	Hansen, Bryan; Vauthier, Jaye B
Subject:	Fwd: NARM EE Demonstration Nov. 29, 2016
Date:	Friday, March 30, 2018 3:17:28 PM
Attachments:	AQD Receipt Letter 3-30-2018 NARM 11292016 Demo.pdf ATT00001.htm

FYI

Sent from my iPhone

Begin forwarded message:

From: Kristina Hooper <kristina.hooper@wyo.gov>
Date: March 30, 2018 at 3:10:00 PM MDT
To: Chris Blake <cblake@peabodyenergy.com>
Cc: Cara Keslar <cara.keslar@wyo.gov>, Daniel Sharon <daniel.sharon@wyo.gov>, Tanner Shatto <tanner.shatto@wyo.gov>
Subject: NARM EE Demonstration Nov. 29, 2016

Chris,

Thank you for the submittal of the Exceptional Event Demonstration to request exclusion for the exceedance that occurred at NARM on November 29, 2016. Attached is the AQD receipt letter. The hardcopy will be arriving in the mail soon.

Here is the link to the AQD EE Process document for your convenience.
http://deq.wyoming.gov/media/attachments/Air%20Quality/Monitoring/Reference%20Documents/Exceptional%20Event%20Process_industry_new%20rule%20final.pdf

If you have any questions regarding the process, feel free to call or email anytime.

Thanks,

Kristina Hooper-Barden
Coal Mine Project Manager
Wyoming DEQ, Air Quality Division
200 W. 17th St., 3rd Floor
Cheyenne, WY 82002
Office: (307) 777-5108
Email: kristina.hooper@wyo.gov

03-30-18 AQD Sent Letter Acknowledging Receipt of Exceptional Event Demonstration Report Package and Outlining Review Process

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

Todd Parfitt, Director

March 30, 2018

Chris Blake, Supervisor, Environmental
Peabody Energy, North Antelope Rochelle Mine
Caller Box 3035
Gillette, WY 82717-3035

RE: Request to flag data as due to Exceptional Event under 40 CFR 50.14

Dear Mr. Blake,

This letter confirms the receipt by the Air Quality Division (AQD) of your Exceptional Event Flag Request for the following PM10 monitored exceedance at the North Antelope Rochelle Mine (NARM) located in Campbell and Converse Counties, Wyoming: November 29th, 2016 at the NA-8 monitor. The request to flag data was received on March 29th, 2018.

The request will be reviewed by an AQD team, and you will be notified as to whether or not the request fulfills all necessary requirements in accordance with 40 CFR 50.14.

The AQD offers a maximum of two (2) opportunities for additional information submittals by the company and AQD team review, at the discretion of the team. After a final submittal, a team decision will be made to either approve or disapprove your request to flag data. After the review process, if the decision to approve your request is made, a thirty (30) day public comment period is required. The Exceptional Event Flag Request will be submitted, by the AQD, to EPA Region 8 for concurrence.

If the decision is made to disapprove your request, you will be notified and provided with the reason(s) for denial.

Please contact me at kristina.hooper@wyo.gov or 307-777-5108 if you have questions concerning this matter or need additional guidance.

Sincerely,

Kristina Hooper-Barden

Kristina Hooper-Barden
Air Quality Analyst
Wyoming DEQ – Air Quality Division

Cc: Cara Keslar, Monitoring Section Supervisor
Daniel Sharon, Monitoring Program Principal
Tanner Shatto, District Engineer

10-29-18 AQD Sent Letter Responding to Exceptional Event Demonstration Report and Notifying NARM of Decision to Pursue Flagging of NA-8 PM_{10} Data From 11/29/2016 Under the Exceptional Event Rule

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

DEQ

Matthew H. Mead, Governor

Todd Parfitt, Director

October 29, 2018

Chris Blake, Environmental Supervisor
Peabody Powder River Mining, LLC, North Antelope Rochelle Mine
Caller Box 3034
Gillette, WY 82717

RE: Request to flag data as due to an Exceptional Event under 40 CFR 50.14 for North Antelope Rochelle Mine November 29, 2016 Exceedance

Dear Mr. Blake,

On November 29, 2016, the North Antelope Rochelle Mine (NARM) recorded an exceedance of the 24-hour PM_{10} National Ambient Air Quality Standard (NAAQS) and Wyoming Ambient Air Quality Standard (WAAQS) at the NA-8 monitor. The NA-8 final 24-hour average concentration was 299.6 $\mu g/m^3$.

On March 29, 2018 the Air Quality Division (AQD) received the request that data for the NA-8 site on November 29, 2016 be flagged under 40 CFR Part 50.14 "Treatment of Data Influenced by Exceptional Events" due to high wind in IMPACT monitoring report MRPT001646.

After review of the submitted materials, the AQD has decided to pursue NARM's request to flag the PM_{10} data collected at the NA-8 site on November 29, 2016 under 40 CFR 50.14.

In order to move forward, the AQD requests an electronic copy of all the documentation and correspondence submitted during the review process. All correspondence, starting with the original notification to the AQD, the original Exceptional Event packet, any requests for additional information, responses to those requests, and other information submitted to the AQD during the review process should be combined into a single, chronologically ordered .pdf document and submitted to the AQD. Please submit the document into IMPACT as a Monitoring Report.

Next steps after the chronological packet is received will be to post the packet for a 30 day public comment period, response to any comments, and (in cases in which the AQD's decision to flag the data is unchanged) discuss submitting the demonstration to EPA with NARM.

NARM's final packet is requested two (2) weeks from receipt of this letter.

Please contact Kristina Hooper-Barden at 307-777-5108 or kristina.hooper@wyo.gov if you have questions regarding this matter.

Sincerely,

Cara Keslar
Monitoring Section Supervisor
Wyoming DEQ – Air Quality Division

CC: Kristina Hooper-Barden, Monitoring Project Manager
Daniel Sharon, Monitoring Program Principle
Tanner Shatto, District Engineer
IMPACT – MRPT001646